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**How do differential conceptualisations of voice-hearing influence  
attributions and behavioural intentions towards voice-hearers?**

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**Doctorate in Clinical Psychology**

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## Thesis Abstract

**Background:** Stigmatisation negatively affects those being stigmatised. Anti-stigma campaigns suggest that biogenetic explanations reduce attributions of personal responsibility towards those with a mental illness. This study focused on one experience: Voice-hearing, which is associated with mental illness, namely schizophrenia, but may be considered to be a common experience, as at least 10% of the general population will hear voices at some point in their lives. There are multiple theories on the mechanisms that underlie voice-hearing experiences. However, each theory has strengths and limitations and there is limited empirical evidence to support the view that one theory is superior to others.

The primary aim of this study was to test whether attributions, emotional responses and behavioural intentions towards voice-hearers were sensitive to differential conceptualisations of voice-hearing. The secondary aims were (a) to test attribution theory and identify attributions and emotional mediators that influence behavioural intentions and (b) to explore the extent to which various socio-demographic characteristics influence attributions.

**Methodology:** 1,004 members of the general public were recruited using online resources. They completed self-report questionnaires online. Attributions, emotional and behavioural responses were measured using an adapted attribution questionnaire, which also contained questions related to familiarity.

**Results:** Analysis of Variance (ANOVAs) found that four out of five attributions were not sensitive to conceptualisations offered. The attribution of personal responsibility was sensitive to conceptualisations. Responses from the biogenetic conceptualisation were significantly lower than the responses from the cognitive conceptualisation. There was no statistical significance between conceptualisations and (a) emotional responses (b) behavioural intentions, or (c) behavioural outcomes.

Mediation analyses indicated that there was an indirect relationship between four out of five attributions and behavioural intentions, which were mediated by emotional responses. Fear was the strongest predictor of coercive behaviours and was negatively associated with helping behaviour. The construct 'pity' appeared to be viewed as a negative emotion, as results for this construct were



similar to those of anger and fear. Correlation analysis demonstrated a small-to-medium sized relationship between behavioural intentions and behavioural outcomes, which was added to an adapted attribution pathway model. Additional analyses found that stressful life experiences produced neither a direct nor an indirect relationship with behavioural intentions and appeared to be the least stigmatising of the six causal explanations.

Further correlation analysis found that professional familiarity was associated with a reduction in attributions of dangerousness. However, there were only small associations between socio-demographic variables and attributions.

**Conclusions:** These findings are unique in that they extend research into stigmatising attributions towards voice-hearers and extend attribution theory. The biogenetic conceptualisations lowered attributions of personal responsibility, but mediation analysis suggests that attributions of personal responsibility were positively associated with increased social distance and coercive behavioural intentions. These results have clinical implications as the differences between medical and psychological approaches reflect the different conceptualisations offered to service-users within mental health services. The least stigmatising conceptualisation appeared to be Family Intervention. This was the only conceptualisation that utilised a bio-psycho-social model. Future research should focus on whether, in practice, this would be the least stigmatising conceptualisation used within mental health services. Further consideration should be given to its use in future anti-stigma campaigns.

## **Statement of Contribution**

The work within this submitted thesis is my own work and credit has been given to the work cited within both the journal article and the extended paper. Outlined below is an overview of each element of the research process and acknowledgement to those who contributed to each element.

### **Project Design**

Deborah Kingston (supervised by Nima Golijani-Moghaddam & David Dawson)

### **Vignettes**

Deborah Kingston (supervised by Nima Golijani-Moghaddam & David Dawson). A special thanks to Anna Tickle and to a service-user who hears voices, for their contributions to this process.

### **Adapted Attribution Questionnaire**

Deborah Kingston (supervised by Nima Golijani-Moghaddam & David Dawson)

### **Application for Ethical Approval**

Deborah Kingston

### **Participant Recruitment**

Deborah Kingston

### **Data Collection**

Deborah Kingston

### **Data Analysis**

Deborah Kingston (supervised by Nima Golijani-Moghaddam)

### **Write up**

Deborah Kingston (supervised by Nima Golijani-Moghaddam & David Dawson. A special thanks goes to Aidan Hart, who offered feedback on the writing style within the extended introduction chapter)

## **Journal Article**

### **How do differential conceptualisations of voice-hearing influence attributions and behavioural intentions towards voice-hearers?**

#### **Abstract<sup>1</sup>**

This study has focused on voice-hearing, which is commonly associated with schizophrenia. Over the last twenty years, biogenetic conceptualisations have underpinned anti-stigma campaigns. However, public attitudes remain unchanged, which suggested the need for an alternative approach. 1,004 respondents (a) took part in an online survey, (b) were randomly allocated a vignette offering differential conceptualisations of voice-hearing, and (c) answered an adapted attribution questionnaire. Findings suggest that biogenetic conceptualisations lowered attributions of personal responsibility, whereas cognitive conceptualisations increased it. Attributions of dangerousness, emotional responses and behavioural intentions were not sensitive to conceptualisations. An extension of attribution theory is offered, as mediation analysis highlighted the role of attributions in eliciting an emotional response, which mediated behavioural intentions and outputs. In conclusion, this study highlights the need for future research to explore conceptualisations and their potential priming effects on mental health professionals, service-users and anti-stigma campaigns.

Key Words: Stigma; Voice-hearing; Attribution Theory; Mediation Analysis

#### **Background Literature**

There has been a long history of people who experience voice-hearing (i.e., hearing voices unheard by others). Earliest accounts refer to voice-hearing experiences of historical figures such as Socrates, Moses and Jesus (Romme & Escher, 1993). In many cultures, voice-hearing is conceptualised as a spiritual or religious gift. For example, in South Africa, Xhosa people who hear voices are supported to become indigenous healers (Sodi, 1995, cited in Thomas & Leudar, 1996). However, within western societies, voice-hearing is considered to be rare

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<sup>1</sup> Clinical Psychology: Science and Practice guidelines state that the abstract should contain no more than a maximum of 960 characters and spaces (which is approximately 120 words), followed by three to six key words. They also suggest that Abstracts, tables, and figure captions should be typed on separate pages, and be placed at the end of the manuscript for production purposes, however, for the purpose of this academic submission tables, figures will be placed within the journal and not at the end, but will be edited prior to submission. Rational for choice of journal can be found at the start of the extended paper

and extraordinary (Beavan & Read, 2010; Leudar & Thomas, 2000) and associated with mental illness (Moskowitz, Corstens & Kent, 2011). Conversely, epidemiological studies have challenged the notion that voice-hearing is a symptom of a mental illness, suggesting that voice-hearing is a relatively common experience, with prevalence rates reported to be around 10% (Beavan, Read & Cartwright, 2011; Johns, Nazroo, Bebbington & Kuipers 2002; Tien, 1991),<sup>2</sup> compared with a prevalence rate of 1% of those diagnosed with schizophrenia (Jablensky, 2000).

The purpose of this study is to examine whether differential conceptualisations of voice-hearing produce different cognitive, emotional and behavioural responses. This study utilises an attribution questionnaire (Corrigan, Markowitz, Watson, Rowan & Kubiak, 2003), which has consistently produced reliable measures, to assess the impact of differential conceptualisations on respondents' attributions emotions (e.g., fear, pity, anger) and behavioural intentions (e.g., helping/distance and coercive/segregation). The focus is on four conceptualisations: (a) spiritual/religious, (b) biogenetic/medical, (c) cognitive/cognitive behavioural therapy, and (d) systemic/family intervention. The latter three are interventions used to understand and manage voice-hearing within mental health services, as recommended by the National Institute for health and Clinical Excellence (NICE, 2010). However, mental health services (Aneshensel, Phelan & Bierman, 2013) and anti-stigma campaigns such as 'Time for Change' appear to be dominated by the medical model.

### **Conceptualisations of Voice-Hearing**

Despite being a common experience, voice-hearing is still considered by psychiatric services and the general public to be a symptom of a psychiatric disorder, most commonly, schizophrenia<sup>3</sup> (American Psychiatric Association [APA], 2013; Jorm & Griffiths, 2008). Medical conceptualisations would suggest that the aetiology of schizophrenia is due to either biological factors (e.g., disease of the brain; changes in brain structure) or genetic factors (e.g., runs in the family). However, biological and genetic factors<sup>4</sup> alone are insufficient to explain the

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<sup>2</sup> See extended background literature chapter A.1.3 for more information about prevalence rates

<sup>3</sup> See extended background literature chapter A.1.1. to A.1.2. for historical overview of schizophrenia and voice-hearing and current classifications of voice-hearing

<sup>4</sup> See extended background literature chapter A.1.5.1 to A.1.5.2 for further elaboration of biological and genetic explanations

idiographic complexity of voice-hearing phenomena. Individual voice-hearing experiences and voice-content are personally and culturally meaningful and not random, as previously suggested by the medical model (Anthony, 2004). Therefore, consideration of psychological development and social environment (i.e., conceptualisation in terms of psychosocial factors) may help to further knowledge and understanding of voice-hearing experiences.

Those researchers who take a cognitive or systemic approach have offered various conceptualisations of the cause and maintenance of voice-hearing. For example, since the 1960's cognitive theorists have produced a wealth of research, which has led to the development of Cognitive Behavioural Therapy and its inclusion in NICE guidelines. Many systemic theories have not undergone the rigorous testing subjected to its cognitive counterpart, and therefore many systemic therapies have not been included in NICE guidelines. However, systemic theories, do have an extensive evidence base for the maintenance of voice-hearing, which dates back to early studies in the 1950s when the Medical Research Council sought to investigate the relationship between relapse rates of patients discharged from psychiatric hospitals and their living conditions (e.g., high expressed emotion in family members). A meta-analysis (Butzlaff & Hooley, 1998) was also undertaken on 26 studies, which confirmed the predictive validity of expressed emotions. However, systemic theories do not offer a causal explanation for the aetiology of voice-hearing, but have drawn on the stress vulnerability model (Zubin & Spring, 1977), as this connects stressful life experiences (including families with high expressed emotion) and biogenetic factors. Furthermore, the stress vulnerability model is still considered to be a robust theory for understanding the development and maintenance of mental health problems (Read, Bentall & Fosse, 2009).

Given the robust evidence base of systemic and cognitive theories, two types of interventions were developed: Family interventions and CBT. These two psychosocial interventions<sup>5</sup> are recommended by NICE (2010) as a way for mental health professionals to understand and manage schizophrenia, under which voice-hearing is subsumed. Many other therapies used in clinical practice

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<sup>5</sup> See extended background literature chapter A1.5.3. to A1.5.5. for an overview of cognitive and systemic explanations of voice-hearing, including the stress vulnerability model

have been excluded from NICE guidelines because they are not considered to have a robust evidence base. Therefore, other theories and interventions for voice-hearing have not been considered in the current study.

Additionally, NICE guidelines are designed for each diagnostic category of mental illness, e.g., depression, anxiety, schizophrenia. However, diagnostic categories are continually being challenged (British Psychology Society [BPS], 2011) and more specifically, others have argued that schizophrenia is a contested diagnosis<sup>6</sup>, which has been deemed unreliable (e.g., Read, Mosher & Bentall, 2004). Therefore, it has been suggested that a symptom-specific approach would enhance theory building and the management of voice-hearing.

This study focuses on voice-hearing and explores various conceptualisations of voice-hearing both within the general population (e.g., religious/spiritual) and mental health services (e.g., medical, cognitive and systemic<sup>7</sup>). The conceptualisations used to account for voice-hearing experiences may have implications for how: (a) the general public understands and responds to voice-hearers, (b) mental health professionals work with voice-hearers, and (c) voice-hearers make sense of their voice-hearing experiences.

As yet, no research has compared cognitive, systemic and medical conceptualisations in public attitude studies. Public attitude<sup>8</sup> studies have been largely concerned with stigma and have primarily used a medical conceptualisation to understand how the medical model might affect stigmatisation (e.g., Angermeyer & Matschinger, 2003; Jorm & Griffiths 2008; Read & Law, 1999; Walker & Read 2002). Stigmatisation has serious consequences for those perceived as mentally ill as they often experience discrimination. Voice-hearers may be classified by the general public, or mental health professionals, as having a major mental illness. They may consequently be distinguished from the general public as 'different' and subsequently marginalised.

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<sup>6</sup> See extended background literature chapter A1.4. for issues related to diagnosis of Schizophrenia

<sup>7</sup> The term FI is not a conceptualisation but an intervention derived from Systemic Theory and will be used interchangeably with systemic throughout this study.

<sup>8</sup> See extended background literature chapter A.1.6. to A1.8 for an overview of attitudes, stigmatising attitudes and social-cognitive models of stigma

## **Stigmatisation - General Public**

Goffman's (1963) model of stigma first highlighted that people may be tainted or discriminated against when their personal attributes are deemed by others to be disturbing. Link, Cullen, Struening, Shrout and Dohrenwend (1989) expanded upon this to explain the role of psychiatric labels, suggesting the label elicits preconceived beliefs about those with a mental illness. Despite a wealth of anti-stigma campaigns over the last twenty years to reduce these preconceived beliefs, attitudes towards those with mental illness has remained relatively stable (Angermeyer & Dietrich, 2006; Dietrich, Matschinger & Angermeyer, 2006). Furthermore, there remains a tendency for people to be fearful and remain socially distant from those who are considered to have a mental illness, especially those considered to experience voice-hearing within a diagnosis of schizophrenia (Angermeyer & Dietrich, 2006).

There have been some contradictory findings across public attitudes studies towards those with a 'mental illness' (including voice-hearers). For example, some authors (e.g., Angermeyer, Buyantugs, Kenzine & Matschinger, 2004; Lincoln, Arens, Berger & Rief 2008; Read, 2007) propose that medical conceptualisations of voice-hearing increase stigma, by promoting attributions of dangerousness (especially towards those who have a diagnosis of schizophrenia). This then creates fear-responses and promotes social exclusion (Corrigan 2000; Corrigan & Shapiro, 2010). Conversely, Jorm and Griffith (2008) found that it was not medical conceptualisations that influenced public attitudes towards those with mental illness, but behaviours associated with mental illness that resulted in stigmatising attitudes. Dietrich et al. (2004) found that when the general public perceive biological factors to be the cause of schizophrenia, this results increased social distance. However, in a recent meta-analysis, Kvaale, Haslam and Gottidiener (2013) found that biogenetic conceptualisations did not affect social distance especially when conceptualisations were based on genetic factors. However, they did increase perceptions of dangerousness and pessimistic attitudes, which are considered to hinder service-users' abilities to recover from psychological distress.

## **Stigmatisation - Voice-Hearers**

It is important that we understand public attitudes<sup>9</sup> towards voice-hearers, as it can promote self-fulfilling prophecies that voice-hearers cannot be helped (Kvaale et al., 2013). Furthermore, those perceived to have mental health difficulties often feel stigmatised (e.g., denied opportunities for social inclusion). This impacts on socio-economic outcomes for voice-hearers who enter mental health services (e.g., Gary, 2005; Penn & Martin, 1998). Voice-hearers<sup>10</sup> often feel discriminated against by the general public, which may exacerbate their sense of shame; encourage secrecy (Byrne, 2000) and stop them seeking support from health care or mental health professionals (Corrigan, 2000). Corrigan (2004a) highlighted that stigmatisation ultimately interferes with service users engagement and treatment with mental health service.

## **Stigmatisation – Mental Health Professionals**

It would seem that professionals also display stigmatising attitudes towards those with mental health difficulties (e.g., Schulze & Angermeyer, 2003). The first author is unaware of any professional attitude studies that have explored attitudes towards voice-hearers per se. Most research that has explored professionals' attitudes has done so within a context of schizophrenia, so attitudes will be explored within this context. Professionals<sup>11</sup> who work with those with a mental illness, including schizophrenia, are not necessarily less likely to display negative perceptions. For example, Lauber, Nordt, Braunscheig and Rössler (2006) sampled 1,073 Swiss mental health professionals, who rated the differences between those with a mental illness and those without in regards to positive (e.g., clever, creative) and negative statements (e.g., unpredictable, weird, stupid, dangerous, socially disturbing). Lauber et al. (2006) found that psychiatrists displayed more negative attitudes towards people with mental illness than other mental health professionals did. However, psychiatrists are not the only profession considered to display negative attitudes. Servais and Saunders (2007) explored clinical psychologists' attitudes towards three types of clinical presentation: Moderate depression, borderline personality disorder (BPD), and

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<sup>9</sup> See extended background literature chapter A1.10. for more information on public attitude studies

<sup>10</sup> See extended background literature chapter A.1.12. for more information on service user's perceptions studies

<sup>11</sup> See extended background literature chapter A.1.11. for more information on professional attitude studies



schizophrenia. Those people with BPD and schizophrenia were rated more negatively than those with moderate depression.

Negative attitudes of mental health professionals can encourage stigmatisation. Magliano, Fiorillo, De Rosa, Malangone and Maj (2004) found that mental health professionals supported a range of social restrictions. For example, 54% of mental health professionals who were surveyed, agreed with the statement that 'people with schizophrenia should not get married'. 29% of nurses agreed with the statement that 'people with schizophrenia will not recover sufficiently to enable them to be trusted as a babysitter'. However, this would imply that 71% did not agree with this statement. Despite this inconsistency, negative attitudes of mental health professionals impact on the use of coercive treatments and segregation (Rao et al., 2009). However, models of stigma do not offer a useful way to explain the relationship between stigmatising attitudes and behavioural responses.

### **Anti-Stigma Campaigns**

Claims have been made that medical conceptualisations would reduce stigma towards mental illness by highlighting that 'an illness' is outside the control and responsibility of the individual. Many authors (e.g., Angermeyer & Dietrich, 2006; Read, Haslam, Sayce & Davies, 2006) have conducted systematic literature reviews, have reported that anti-stigma campaigns have not changed public attitudes towards people who experience symptoms associated with mental illness. This may suggest the need for providing an alternative conceptualisation (Schomerus et al., 2012).

There have been many models of stigma, including a social-cognitive model (Corrigan, 2000), which offers a description of how perceptions lead to stereotypes. This then leads to discriminatory behaviours. Corrigan's (2000) model, though, does not offer a causal mechanism to explain how an event could lead to discriminatory behaviour. However, attribution theory has been useful in understanding the causal mechanisms explaining how attributions and behaviours are mediated by emotional responses.

### **Attribution Theory**

Given the potential impact of stigmatisation, it is important to consider how

the general public's negative perceptions of this specific group (i.e., voice-hearers) might arise. Attribution theory<sup>12</sup> encapsulates many attribution models (Corrigan, 2000) which offer useful perspectives on how attributions – of controllability, personal responsibility, stability, globality and locus of causality – influence emotional responses and behavioural intentions towards another person (Schmidt & Weiner, 1988; Weiner, 1979; 1980; 1985; 1986; 1990; 1995; Weiner, Nierenberg & Goldstein, 1976; Weiner, Perry & Magusson, 1988; Willner & Smith 2008a; Willner & Smith 2008b). For example, an individual might attribute another person's behaviour as uncontrollable, related to internal locus of causality (e.g., biological factors), outside of their personal responsibility, and stable over time. This may then elicit a positive emotional reaction of pity and result in helping behaviour (e.g., Corrigan, 2000; Weiner, 1995). However, if the behaviour is viewed as controllable, within personal responsibility, and unstable, this may elicit a negative emotional response of anger and result in coercive behaviour (e.g., Corrigan, 2000; Weiner, 1995). A fifth attribution, globality, stems from research exploring the learned helplessness theory of depression (Abramson, Seligman & Teasdale, 1978). It is proposed that there may be a tendency for people to globalise causal dimensions across all situations (Abramson et al., 1978). However, this has not been empirically researched.

In addition, a systematic literature review concluded that people make attributions about whether a person with a mental illness is dangerous (Jorm, Reavley & Ross, 2012). This, in turn, is thought to lead to an avoidance of people with mental illness, and a preference for coercive treatments and segregation (Corrigan et al., 2003; Link, Phelan, Bresnahan, Stueve & Prescosolido, 1999). Research found that mental health professionals and in particular many psychiatrists and mental health nurses, hold attributions of dangerousness about those diagnosed with schizophrenia (e.g., Caldwell & Jorm, 2001; Lauber et al., 2006). This suggests that perceptions and behaviours towards those with voice-hearing cannot be purely explained by Weiner's (1976; 1979; 1980; 1985; 1986; 1988; 1990; 1995) attribution theory as dangerousness is not considered to be a key factor.

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<sup>12</sup> See extended background literature chapter, section A1.9., for an overview of the history of and utility of attribution theory

An attribution model which addresses some of the limitations of Weiner's attribution theory on public perceptions towards those with a mental illness, is the model specified by Corrigan et al. (2003). Corrigan developed an attribution questionnaire to measure the public's attitudes and behavioural intentions towards those with a mental illness when two competing explanations were offered (trauma to the brain; use of substances). From this, Corrigan et al. (2003) identified two causal pathways: Personal responsibility; and perceptions of dangerousness, which mediated emotional and behavioural responses. The current study applied an attribution model which integrated previous variations (specifically, those developed by Weiner; Corrigan; and Willner) to broadly capture aspects of attribution theory which may have relevance for understanding intentions towards voice-hearers (see figure 1<sup>13</sup>).

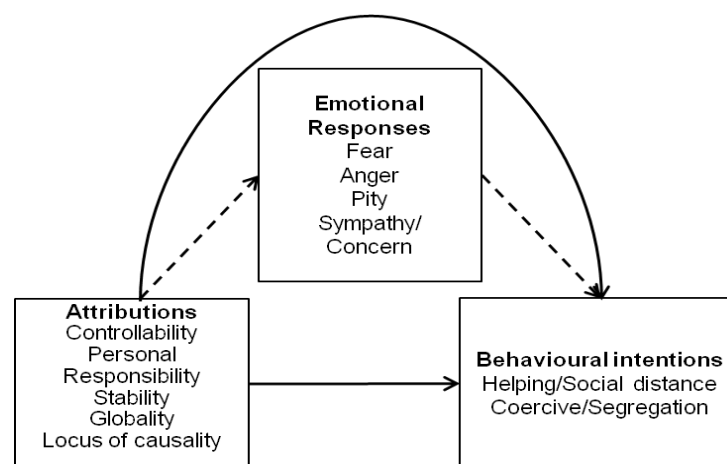


Figure 1. Adapted version of Willner and Smith's (2008b) pathway analysis  
The straight arrow depicts a direct relationship between attributions and behavioural intentions, whereas the overarching arrow depicts an indirect relationship, mediated by emotions.

Research using attribution theory to investigate attitudes towards those with a mental illness has found contradictory results (e.g., Armitage & Conner, 2001; Corrigan et al., 2003; Jorm & Griffiths 2008; Read, 2007). This may be due to the way attitudes and attributions have been used across the literature. However, it is important to note that attitudes and attributions are different. An attitude incorporates three components: cognitions (attributions), emotions and behavioural intentions (e.g., Reber, 1995). Attribution theory proposes a causal mechanism between these three components. An attribution is a cognitive

<sup>13</sup> For alternative attribution pathway model that have been proposed, see figure 7 and , pp. 73-74

process, which people use to make sense of behaviours, events and the world around them. This then influences emotions, which in turn mediate behavioural intentions (e.g., Corrigan, 2000). Although attitudes and attributions can be technically separated (with attributions forming just one component of a broader attitude construct) they are often used interchangeably within extant literature. Within the current study attitudes are being used in the narrower sense, as synonymous with cognitive attributions.

This study also focuses on behavioural intentions (which again are considered another component within the broader attitude construct). However, intentions are regarded as a summary of the motivation required to perform a particular behaviour, reflecting an individual's decision to follow a course of action, as well as an index of how hard people are willing to try and perform the behaviour (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975). The idea that behavioural intentions mediate the attitude-behaviour relationship represents a significant move away from the traditional view of attitudes: rather than attitudes being directly to behaviour, attitudes only serve to direct behaviour to the extent that they influence intentions, whereas a behavioural output is an actual behavioural response (e.g., an action). This current study explores both intentions and outputs towards voice-hearers.

Previous studies have measured behavioural intention as a hypothetical situation on a Likert scale. The current study captured behavioural intentions (within the classes of helping versus coercive intentions), using a Likert scale and additionally, implemented a behavioural outcome measure to capture a behavioural output. Corrigan, Watson, Warpinski and Gracia (2004), used a charity task as a way to measure an actual behavioural response. The current study measured behavioural output by asking participants to provide an actual behavioural response as to whether they could be contacted by a voice-hearer.

## **Justification and Clinical Implications**

The present study builds on previous research in several ways:<sup>14</sup> Firstly, by addressing a number of methodological limitations; secondly, whereas previous research restricted comparison to two conceptualisations (medical and

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<sup>14</sup> See extended background literature chapter A.1.14 to A1.15 for further justifications and clinical implications

psychosocial); this study compares three conceptualisations recommended and used within mental health services (NICE, 2010). Thirdly, a non-mental health conceptualisation (religion/spirituality) and a control group (no conceptualisation offered) were included. This allows an exploration of which conceptualisation, if any, may be considered to be a useful framework for modulating responses to voice-hearers. Fourthly, previous studies have used non-standardised hypothetical vignettes for example, adding psychiatric labels to one vignette but not the other, which may add a confounding variable. This present study used standardised vignettes and compared the effects of these conceptual frameworks on participants' attributions. This allowed for the manipulation of independent variables, which may identify a mechanism that explains causal attributions. This study also provided a large-scale empirical test of the attribution model, allowing for testing of hypothetical mediational pathways between attributions and behavioural intentions.

When exploring clinical implications, Clinical Psychologists support and encourage the normalisation of voice-hearing within clinical settings, but have been noticeably absent in the development and evaluation of campaigns for reducing stigma and discrimination for this client group (Corrigan, 2000; Corrigan, 2004b; Corrigan & Shapiro, 2010). This study may provide useful insights for devising a psycho-educational programme based on the least stigmatising conceptualisation or an acceptance of a non-mental health conceptualisation that the public, and particularly voice-hearers, may find helpful. Therefore, the results of this study may support the development of educational programmes for service users, carers, the general public and mental health professionals.

As far as the author is aware, there are no studies that have explored public attitudes or attributions related to the experience of voice-hearing, and/or how differential conceptualisations of voice-hearing influence perceptions and intentions towards the voice-hearer. Furthermore, since no research has explored the different types of psychosocial conceptualisations, this study will be the first to explore whether there are differences between different psychosocial conceptualisations (e.g., CBT and FI) and also psychosocial, biogenetic and spiritual/religious conceptualisations that influence public perception and intentions towards voice-hearers.

## **Aims<sup>15</sup>**

The primary is:

To test whether attributions, emotional responses and behavioural intentions towards voice-hearers are sensitive to differential conceptualisations of voice-hearing.

The secondary aim is:

To test the attribution theory model and identify attributions and emotional mediators that influence behavioural intentions.

## **Methodology**

The design of this study was a web-based survey utilising a randomised group design.<sup>16</sup>

### **Power Calculation**

Estimated effect-size for this study was based on findings from a meta-analysis by Kvaale et al. (2013). The authors examined differential effects of biogenetic versus psychosocial conceptualisations of psychiatric symptoms on attributions of personal responsibility. Analysing across 11 studies (total sample size of 1454) they found an overall difference of small-to-medium effect-size (equivalent to  $f = .198$ ). A power calculation indicated that, given the number of conditions (five) in this study, with an alpha-level set at .05, a sample size of at least 310 (62 per condition) was required to provide sufficient power (80%) to detect an effect of similar magnitude.<sup>17</sup>

### **Participants**

Snowball sampling techniques<sup>18</sup> were used to recruit research participants. The premise is that the researcher passes the information to participants (via Facebook and email) who in turn pass it on to other participants (by sharing the

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<sup>15</sup> An additional secondary aim (aim 3) is presented in the extended background literature chapter section, A.1.16

<sup>16</sup> See extended methods chapter B.1. for the first author's epistemological stance and B.2.. for further information about the design of the study

<sup>17</sup> See extended methods chapter B.11. for rationale for Bonferroni corrections to aim 1 but not aims 2 or 3

<sup>18</sup> See extended method chapter B.3. for a detailed account of recruitment procedures; B.4. for participants; B.4.1. to B.4.2. for inclusion/exclusion criteria; B.5 for socio-demographic information collected

Facebook link or forwarding the email with the survey attached). These second participants pass the information on to a third group, recruitment continues to expand in this way (Vogt, 1999). This method takes advantage of the social network of identified participants, thus providing the researcher with an ever-expanding set of contacts (Thomson, 1997). Furthermore, ten research platforms were also approached, but only four responded and uploaded the survey to their websites, Facebook and Twitter accounts.

## **Ethical Approval**

The authors' host Institution, the University of Lincoln, granted ethical approval.<sup>19</sup>

## **Materials**

**Vignettes.** Vignettes have been the most commonly used approach in studying stigma towards those with perceived with mental health difficulties (Link, Yang, Phelan & Collins, 2004). Five vignettes were utilised, similar to those used by Jorm and Griffiths (2008) in that no diagnostic labels were used.<sup>20-21</sup> The vignettes in this study described a male voice-hearer, John.<sup>22</sup> The description of the voice-hearer and characteristics of his voices remained consistent across the five vignettes. Crucially, each condition offered a different conceptualisation of voice-hearing: (a) medical conceptualisations explain that the aetiology of voice-hearing is caused by biogenetic factors; (b) CBT conceptualisations explain that the aetiology of voice-hearing is caused by a misattribution of inner speech; (c) FI conceptualisations explain that the aetiology of voice hearing is caused by genetic and biological susceptibility to stress; (d) non-mental-health-related conceptualisations do not offer a causal explanation of voice-hearing but set the context of voice-hearing within a spiritual and/or religious context; (e) the control condition does not offer a conceptualisation of voice-hearing.

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<sup>19</sup> See extended method chapter B.10. for ethical considerations

<sup>20</sup> Labelling was excluded to minimise extra-conceptualisation influences on responding to the vignettes: Previous research has shown that use of diagnostic labels can elicit more negative responses (Lincoln et al., 2008)

<sup>21</sup> See extended method chapter B.5. to B.5.2.4. for more information about the use of vignette and conceptualisations presented

<sup>22</sup> See extended methods chapter B5. for a discussion regarding gender differences

The character John and the original conceptualisations were developed by a clinical psychologist who specialises in working with voice-hearers. However, vignettes were altered from the original design, for the purpose of standardisation, to ensure that all conceptualisation conditions were matched for word length and readability (e.g. Flesch scores)<sup>23</sup> (Klare, 1974). These were agreed by all three authors who all had a working knowledge of the conceptual frameworks of voice-hearing. Additionally, vignettes were checked for accuracy and validity by a service-user who hears voices, from the University of Nottingham's service-user involvement panel.

**Attribution Questionnaire.** The present study has drawn on the work of: Weiner, Corrigan, Jorm and others. Corrigan et al.'s (2003) attribution questionnaire has been used within a number of settings e.g., adult and child mental health services. This questionnaire is one of the most widely used and it has been found to have good reliability (Brown, 2008). It was replicated within this study and is indexed by internal coefficients ranging from .70 to .96,<sup>24</sup> but was adapted for the purpose of the current study to include additional constructs.

**Locus of causality.** Locus of causality (e.g., internal or external factors) was central to Weiner's attribution theory. In the present study, questions were utilised from a number of sources (e.g., Jorm & Griffiths, 2008; Martin, Pescosolido & Tuch, 2000) in order to measure whether participants located the cause of voice-hearing to internal or external factors. Six questions were added: Three internal factors ('own character'; 'chemical imbalance in his brain'; 'genetic factors') and three external factors ('way he was raised'; 'stressful circumstances'; 'God's will').

**Stability/Globality.** These questions provided a measure of whether participants considered that John's voice-hearing would be consistent over time and occur in all situations.

**Behavioural Intention Measure.** Corrigan suggested that self-reported behavioural intention acts as an antecedent to an actual behaviour (Corrigan et al., 2003), although this assertion is uncorroborated as it was never formally

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<sup>23</sup> See extended Methods chapter B.5.1. for more information readability tests

<sup>24</sup> See extended methods chapter B.9. for more information on internal validity scores



tested. However, Corrigan and others (Corrigan et al., 2002; Corrigan, et al., 2004) used behavioural outcome measures in the form of a donation to a mental health charity, which was correlated with helping behaviour, but the association was considered to be small.<sup>25</sup> In addition, Sheeran (2002) argued that behavioural intention does not always translate to actual behaviour. Because of funding constraints, the behavioural outcome measure was altered for the present study. The new behavioural outcome measure was at the end of the survey, which prompted participants to provide an actual behavioural response (i.e., consenting to be contacted by a voice-hearer to discuss future research). Answers were restricted to a Yes/No response.

## **Procedure**

Following ethical approval, participants were recruited using social networking sites and email (see Figure 2 ). The survey was conducted online using 'Survey Gizmo'. The participant information sheet was provided on the introduction page. After reading this, participants were directed to read a consent form and asked to provide informed consent. If participants did not provide consent, they were thanked for their interest and the survey closed. If participants provided consent (indicated by clicking a confirmatory response-option), they were directed to a page to create a personal identification code, in order to maintain anonymity, to allow them to withdraw their data from the study up to two weeks after completing the survey.

Participants were then directed to provide demographic information and were: (1) randomly directed to read one of five vignettes; (2) invited to complete an attribution questionnaire; (3) asked to respond to questions related to familiarity; (4) asked to provide a behavioural outcome measure to meeting a voice hearer; and (5) thanked for their co-operation and time and were fully debriefed. This debrief provided a full overview of research aims. All five vignettes were displayed and explained. Furthermore, a statement that many members of the general population have experienced voice-hearing at some point in their lives, was included to normalise voice-hearing experiences.

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<sup>25</sup> See extended discussion chapter D.1.5. for a comparison between Corrigan's donation task and the current behavioural outcome measure

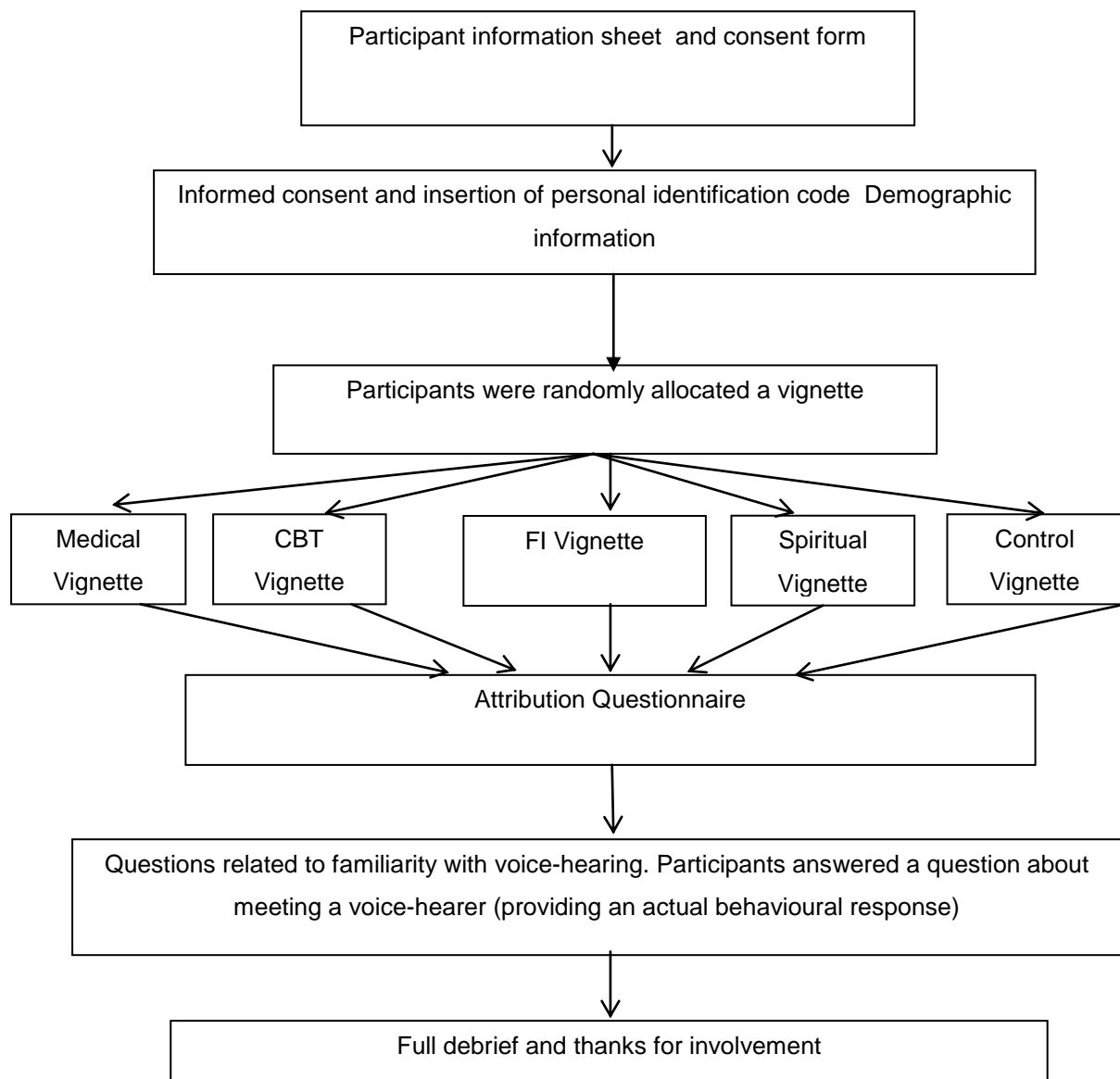


Figure 2. Research Procedure Flowchart

## Analysis

Quantitative analysis was performed using IBM SPSS for windows version 21. The primary aim was analysed using a one-way between-groups analysis of variance (ANOVA). Due to multiple testing, Bonferroni corrections<sup>26</sup> were applied to the alpha criterion for significance. As there were 12 separate ANOVA tests, p-value was adjusted to .004 (i.e., .05/12). When assumptions for homogeneity were violated, the F ratios were adjusted using Brown-Forsyth (Field, 2013). When assumptions for normality were violated, a non-parametric, Kruskal-Wallis, test

<sup>26</sup> Due to multiple testing, Bonferroni corrections was applied to the alpha criterion for significance. As there were 6 separate ANOVA tests, p-value was adjusted to (.05/6).008. See extended methods chapter B.11. for more information

was chosen as an alternative.<sup>27</sup>

Mediation Analysis was used to test the model of Attribution Theory as outlined in Field (2013). Given that attribution theory makes very specific a priori predictions, corrections were not applied. Therefore, the findings for aim 2 must be interpreted cautiously. However, despite setting stringent p-values, Field (2013) argues that statistical significance is not the same thing as actual importance. He argues that non-statistically significant findings should not be overlooked. Therefore, despite setting stringent p values (i.e., statistical levels) to avoid a type 1 error), all results will be reported and their importance discussed within the research arena.

## **Results section**

### **Sample characteristics**

1,004 participants completed the survey. However, only 854 participants reported their age, which ranged from 18-80 years old, with the mean being 41.5 years old. 72% females and 28% males completed the questionnaire.

Participants' ethnicity was coded as: (1) White British (55%), (2) British other (37%), (3) European (2.1%), (4) American/Canadian (1.7%), (5) Australian/New Zealanders (0.8%), (6) Asian (0.3), and (7) other (3.1%). Preliminary analysis revealed that randomisation was achieved, as there were no significant differences between groups in terms of their socio-demographic characteristics.<sup>28</sup> As such, socio-demographics were not controlled for in subsequent analyses.

### **Aim 1**

A series of one-way between-group ANOVAs was conducted, comparing whether scores in attributions (personal responsibility, dangerousness, controllability, stability and globality); emotions (pity, sympathy/concern, anger, and fear); behavioural intentions (helping and coercive); and behavioural outputs were sensitive to differential conceptualisations of voice-hearing. Means and standard deviations are presented along with descriptive statistics in Table 1.<sup>29</sup>

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<sup>27</sup> See extended results chapter C.1.1. for preliminary analysis and the rationale for using parametric and non-parametric tests

<sup>28</sup> See extended results chapter - table 7 on page 109

<sup>29</sup> See extended results chapter C.1.1. to C.1.1.6. for an overview of rationale for using non-parameter tests

When analysing the influence of conceptualisations on attributions, there was no significant difference between conceptualisations and (a) 'dangerousness',  $F(4, 999) = 1.65, p = .160$  (b) 'controllability',  $F(4, 999) = 3.176, p = .013$ ; (c) 'stability',  $F(4, 999) = 3.14, p = .014$ ; (d) 'globality',  $F(4, 999) = 2.48, p = .043$ ; However, there was a statistical significant difference between conceptualisations and the attribution 'personal responsibility'  $F(4, 999) = 4.27, p = .002$ . Despite reaching statistical significance, the actual difference in mean scores between groups was quite small. The effect size calculated using eta squared was .13. Post hoc comparisons using a Bonferroni test, indicated that the mean scores for the cognitive conceptualisation group ( $M = 1.40, SD = 1.69$ ) was statistically significant ( $p = .001$ ) from the biological conceptualisation group ( $M = .78, SD = 1.17$ ). Thus the biological conceptualisation appeared to reduce the attribution of personal responsibility, whereas, cognitive conceptualisations increased attributions of personal responsibility.

Analysis demonstrated that emotional responses towards voice-hearers did not appear sensitive to differential conceptualisations of voice-hearing, as there was no statistically significant result between conceptualisations and emotional responses: fear,  $F(4, 999) = 2.028, p = .088$ ; anger,  $F(4, 998) = .088, p = .986$ ; pity,  $F(4, 999) = 3.839, p = .613$ ; and concern/sympathy,  $F(4, 999) = 3.053, p = .461$ . Despite not reaching significance, post-hoc analysis highlighted that receiving a conceptualisation compared with receiving no conceptualisation, influenced the emotional response of fear.

There were also no statistically significant differences between conceptualisation and (a) helping behavioural intentions,  $F(4, 995) = 1.689, p = .150$ ; (b) coercive behavioural intentions,  $F(4, 998) = .420, p = .795$ ; and (c) behavioural outcomes,  $F(4, 999) = .632, p = .640$ .

Preliminary analysis revealed that locus of causality could not be placed on a dichotomous variable (e.g., internal/external). Differential conceptualisations influenced participants' responses in five out of six 'locus of causality' questions, and were statistically significant: 'Own character',  $F(4, 999) = 5.386, p = <.01$ ; chemical imbalance  $F(4, 999) = 13.886, p = <.001$ ; way he was raised  $F(4, 995) = 4.991, p = .001$ ; stressful circumstances  $F(4, 999) = 13.075, p = <.001$ ; and

genetic  $F(4, 999) = 15.067, p = <.001$ . The variable 'God's will' violated the assumption of normality and was analysed using the Kruskal Wallis Test and was not statistically significant  $\chi^2 = 14.147, p = .007$ . Means and standard deviations are presented along with pairwise comparison analyses in Table 2.

Table 1:

Results of a Series of Descriptive Statistics Exploring Attributions, Emotional and Behavioural Responses by Conceptualisations

Independent variable N= 1004	Attributions (SD)					Emotions (SD)			
	Danger Mean	Controllability Mean* <sup>1</sup>	Personal Responsibility Mean* <sup>1</sup>	Stability	Globality	Pity Mean	Anger Mean	Fear Mean	Concern Mean
Biological (n = 216)	2.42 (1.92)	3.24 (2.27)	.78 (1.17)	4.05 (2.13)	2.57 (2.12)	3.35 (2.41)	1.20 (1.53)	1.77 (1.99)	5.64 (1.81)
Cognitive (n = 199)	2.24 (1.97)	3.50 (2.21)	1.40 (1.69)	4.58 (1.93)	2.27 (1.85)	3.16 (2.36)	1.23 (1.43)	1.80 (1.87)	5.39 (1.85)
Family Intervention (n = 192)	2.23 (2.05)	3.42 (2.23)	1.14 (1.70)	4.64 (1.85)	2.11 (1.89)	3.10 (2.38)	1.23 (1.52)	1.81 (1.96)	5.57 (1.84)
Spiritual/ Religious (n = 210)	2.16 (1.86)	3.02 (2.16)	1.12 (1.63)	4.59 (1.96)	2.57 (2.14)	3.02 (2.36)	1.18 (1.44)	2.00 (2.03)	5.40 (1.90)
Control (n = 187)	2.33 (2.15)	2.81 (2.33)	1.25 (1.64)	4.49 (1.91)	2.15 (2.09)	3.30 (2.46)	1.25 (1.57)	2.25 (1.99)	5.64 (1.77)

Notes: The score range was from 0 to 8 for each construct. A score of 0 means that constructs were not held, whereas a score of 8 meant constructs were held completely. The exception to this was the behavioural output measure, which was scored 0-1 (0 = no 1= yes)

\*<sup>1</sup> Pairwise comparison highlighted the mean difference between the cognitive conceptualisation group and the biological conceptualisation group, which was statistically significant  $p = .001$

Table1:

Continued

Independent variable N= 1004	Behavioural Intentions and output (SD)		
	Helping Mean	Coercive Mean	Meet Bill
Biological (n = 216)	5.70 (1.76)	.97 (1.41)	.32 (.47)
Cognitive (n = 199)	5.48 (1.68)	.92 (1.30)	.33 (.47)
Family Interventions (n = 192)	5.44 (1.92)	.90 (1.37)	.31 (.46)
Spiritual/ Religious (n = 210)	5.44 (1.74)	.96 (1.26)	.28 (.45)
Control Group (n = 187)	5.24 (1.92)	1.07 (1.54)	.27 (.45)

The exception to the scoring was the behavioural output measure, which was scored 0-1 (0 = no 1= yes)

Table 2:  
Results of Descriptive Statistics for Locus of Causality by Conceptualisations

Locus of Causality			Conceptualisation		Difference Between Conceptualisations	Mean Differences
			Mean	(SD)		
Internal factors	Caused by own character	Biological	1.53	(1.81)	Cognitive – Biological	.78*
		Cognitive	2.31	(2.07)	Family – Biological	-.82*
		Family	2.35	(2.19)		
		Spiritual	2.02	(2.15)		
		Control	2.10	(1.99)		
	Chemical Imbalance	Biological	5.56	(2.16)	Biological – Cognitive	1.34*
		Cognitive	4.23	(2.06)	Biological – Family	1.31*
		Family	4.26	(2.37)	Biological – Spiritual	1.09*
		Spiritual	4.47	(2.19)		
		Control	4.85	(2.04)		
	Genetic	Biological	4.72	(2.12)	Biological – Cognitive	1.35*
		Cognitive	3.37	(1.98)	Biological – Family	1.23*
		Family	3.49	(2.01)	Biological – Spiritual	1.01*
		Spiritual	3.70	(2.10)	Biological – Control	1.24*
		Control	3.48	(2.12)		
External Factors	Way he was raised	Biological	2.04	(2.10)	Family – Biological	.86*
		Cognitive	2.70	(2.07)		
		Family	2.93	(2.17)		
		Spiritual	2.51	(2.05)		
		Control	2.61	(2.13)		
	Stress life experiences	Biological	4.24	(2.03)	Family – Biological	1.20*
		Cognitive	4.97	(1.78)	Family – Spiritual	1.01*
		Family	5.44	(1.67)	Family – Control	.76*
		Spiritual	4.42	(1.91)		
		Control	4.68	(1.84)		
	Gods Will* <sup>1</sup>	Biological	.44	(1.36)		
		Cognitive	.24	(.866)		
		Family	.25	(1.05)		
		Spiritual	.63	(1.55)		
		Control	.37	(1.32)		

Notes:

\*All differences were statistically significant (p <.008)

\*<sup>1</sup> 'God's will' variable violated the assumption, therefore Kruskal Wallis tests were performed. However, for easy of readability and for comparisons to be made, descriptive statistics have been used to report the mean and standard deviation

## Aim 2

One way to identify the causal pathways that are considered to underpin attribution theory is to use mediation analysis. Mediation describes the relationship between predictor variables (cognitive attributions) and outcome variables (behavioural intentions), which can be explained by their relationship to the mediating variables (emotional responses) (Field, 2013). Mediation analyses were conducted (figure 3), using the SPSS macros written by Preacher and Hayes (2008) and outlined in Grist and Field (2012). This indirect effect estimates the influence of mediation. For each parameter, robust standard errors and bias-corrected confidence intervals were computed, based on 1000 bootstrap samples.<sup>30</sup> Statistically significant ( $p \leq .05$ ) confidence intervals are determined when the zero is not crossed. Standardised estimates, direct and indirect effects were produced.

Ten mediation analyses were entered into SPSS, one x-variable from each attribution (dangerousness, controllability, personal responsibility, stability and globality), four mediation variables were inserted (pity, concern/sympathy, anger and fear) and one y variable of behavioural intention (helping or coercive). Adjustment for multiple testing was not carried out. Tests were selected according to a priori interest in effects on a limited number of secondary outcomes (Cook & Farewell, 1996).

Figure 3 shows a schematic representation of the mediation models under investigation. Five models explored the relationship between attributions and helping behaviours and five explored the relationship between attributions and coercive behaviours. Given the variables that were measured, only eight simple mediation models were found to demonstrate that emotions mediate the relationship between attributions and behavioural intentions. However, two mediation analyses revealed that (1) globality and coercive behaviours had a marginally stronger direct effect ( $b = .123, p < .0001$ ) than the indirect effect ( $b = .117, CI\ 95\% [.09, .15]$ ) and (2) when exploring the relationship between stability and coercive behaviours there was neither a direct effect ( $b = -.002, p = .91$ ) nor an indirect effect ( $b = -.02, CI\ 95\% [-.05, .01]$ ). The relationship between stability and

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<sup>30</sup> Bootstrapping is used to generate confidence intervals around the indirect effect (Field, 2013) PROCESS default of a1000 bootstrap sample was used in generating the indirect confidence intervals for this study. For more information about using bootstrapping as a robust measure see extended results section C.1.1.4



helping behaviour failed to reach the threshold for a small-sized effect and was not statistically significant ( $b = .03$ , 95% CI =  $-.01, .08$ ). Therefore, stability has been excluded as an attribution variable in figure 4.

Attributions influenced emotional responses differently. For example, there was a large sized effect between dangerousness and fear, and a medium sized effect between fear and (a) personal responsibility, (b) globality. There was a medium-sized effect between anger and (a) dangerousness, (b) personal responsibility and (c) globality. There was also a medium size effect between pity and (a) personal responsibility, (b) dangerousness (c) globality. The emotional response of sympathy/concern was not associated with any of the attributions outlined in figure 4.

As an extension of Aim 2, the relationship between an actual behaviour (agreeing to meet Bill) and (a) helping behavioural intentions, and (b) coercive behavioural intentions, was investigated using Spearman product-moment correlation coefficient. There was a small-to-medium sized effect between helping behavioural intentions and an actual behaviour variable (see table 3),  $\rho = .247$   $n = 1004$ ,  $p = <.01$  and a small-to-medium negative correlation between coercive behavioural intentions and an actual behaviour,  $\rho = -.216$   $n = 1004$ ,  $p = <.01$ . This analytical extension checks whether the attribution model (and in particular, behavioural intention) is associated with target-relevant forced-choice behaviour. Although not a direct test (e.g., linking attributions towards John to actual behaviour towards John), it offers proxy indication of whether the attribution model tested under Aim 2 might be relevant for understanding behaviour towards voice-hearers.

Table 3:  
Spearman's Correlation Measuring Helping and Coercive Behavioural Intentions and a Behavioural Output

Variables	1	2	3
1: Coercive Behavioural Intention	-	-.533*	-.216*
2: Helping Behavioural Intention		-	.247*
3: Behavioural Outcome (Meeting Bill)			-

\*Correlation is significant at the 0.01 level (2 tailed)

Figure 4 is a schematic representation of a multiple mediator model, in which emotions mediate the relationship between attributions and behavioural intention.

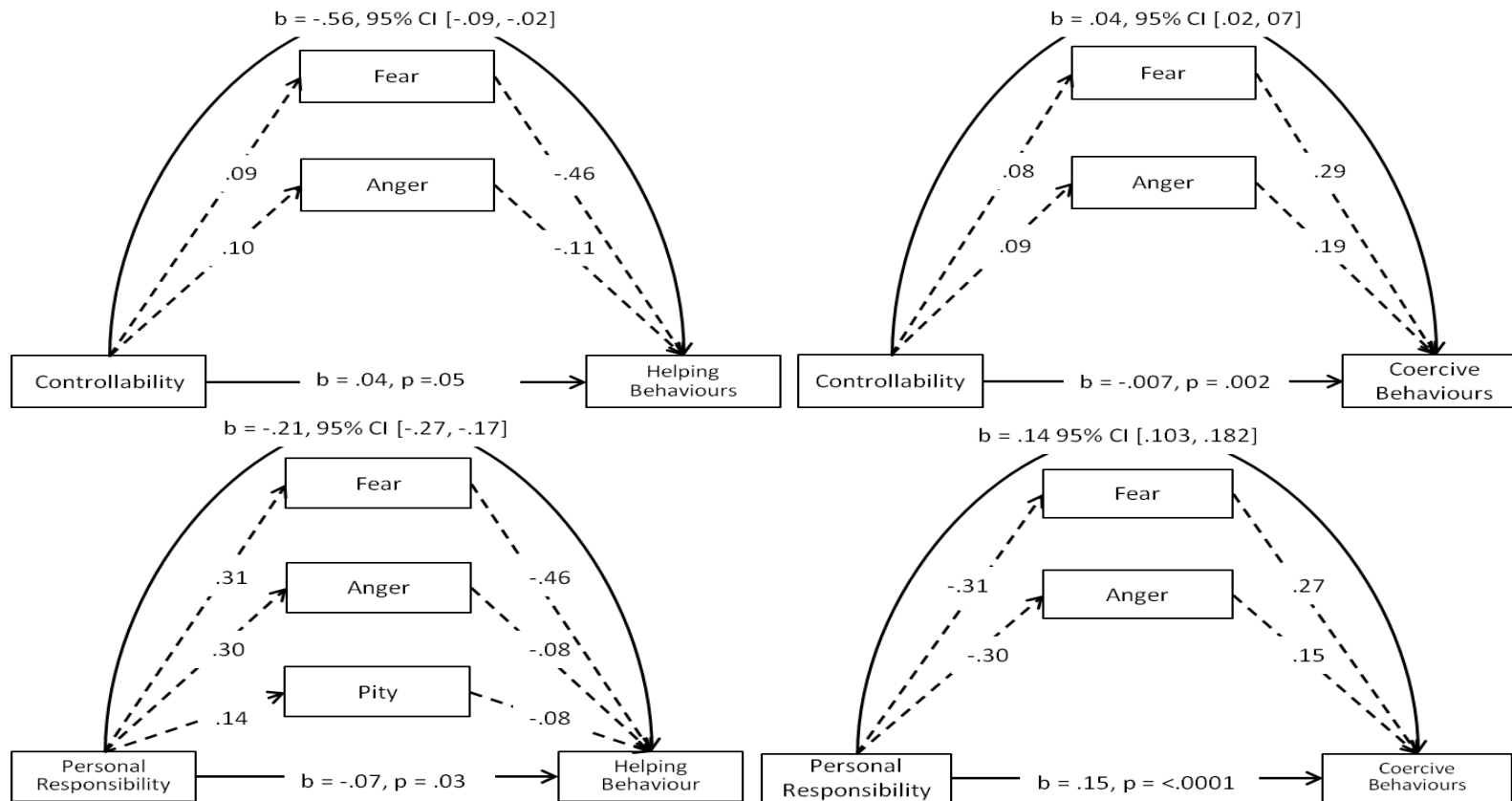


Figure 3. A series of single mediation analyses

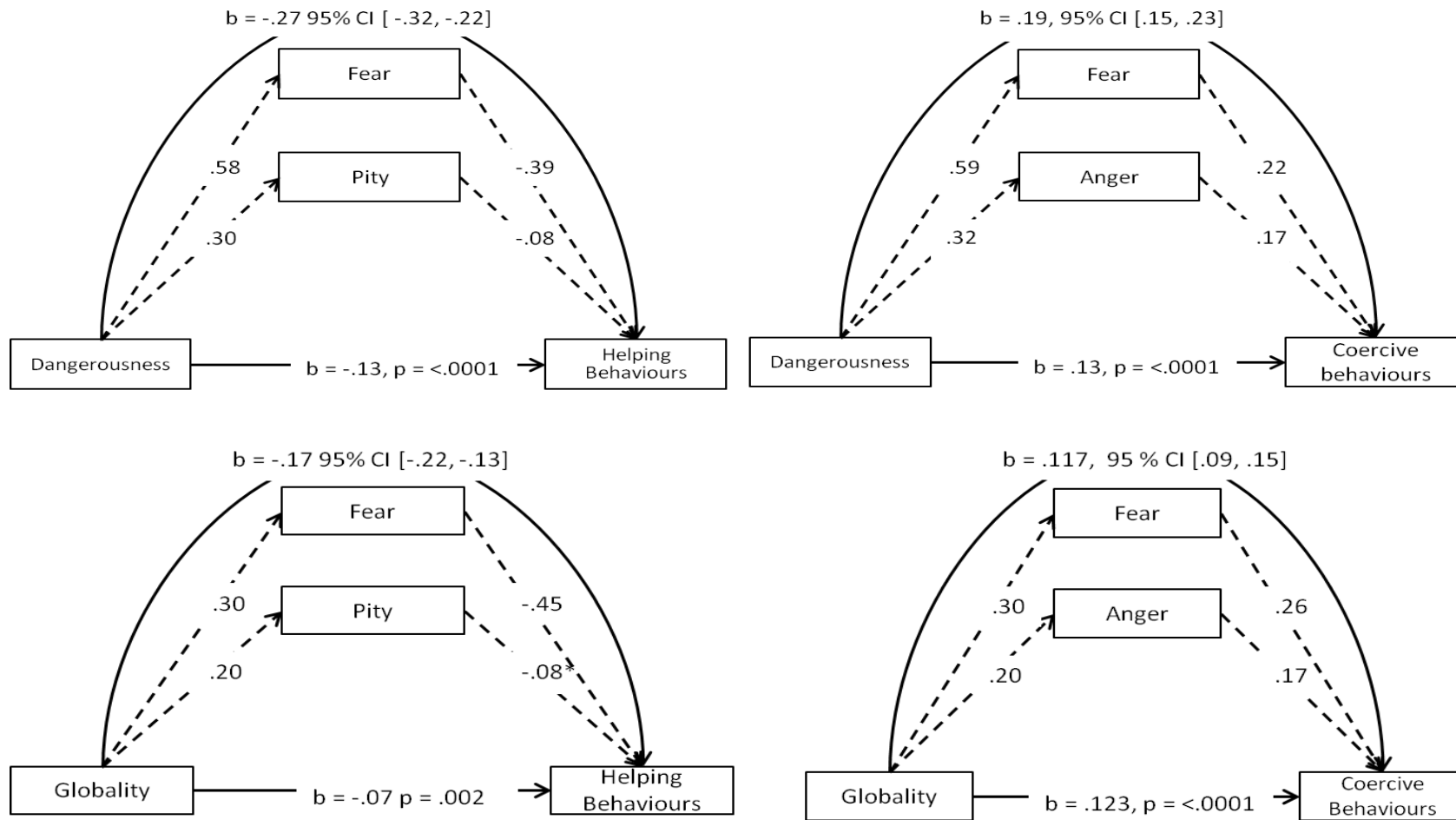


Figure 3. A series of single mediation analyses

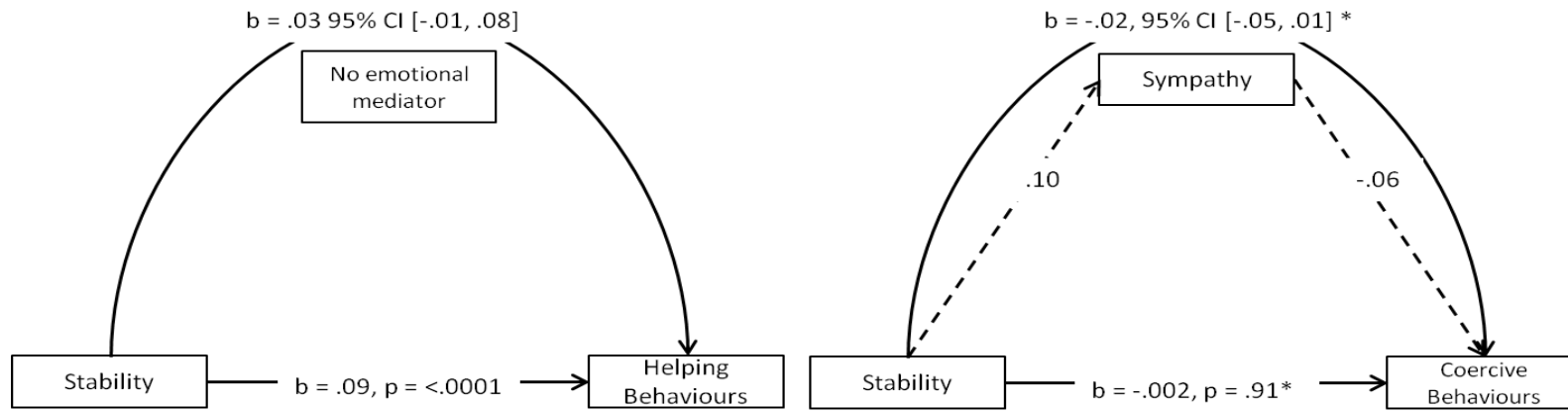


Figure 3. A series of single mediation analyses

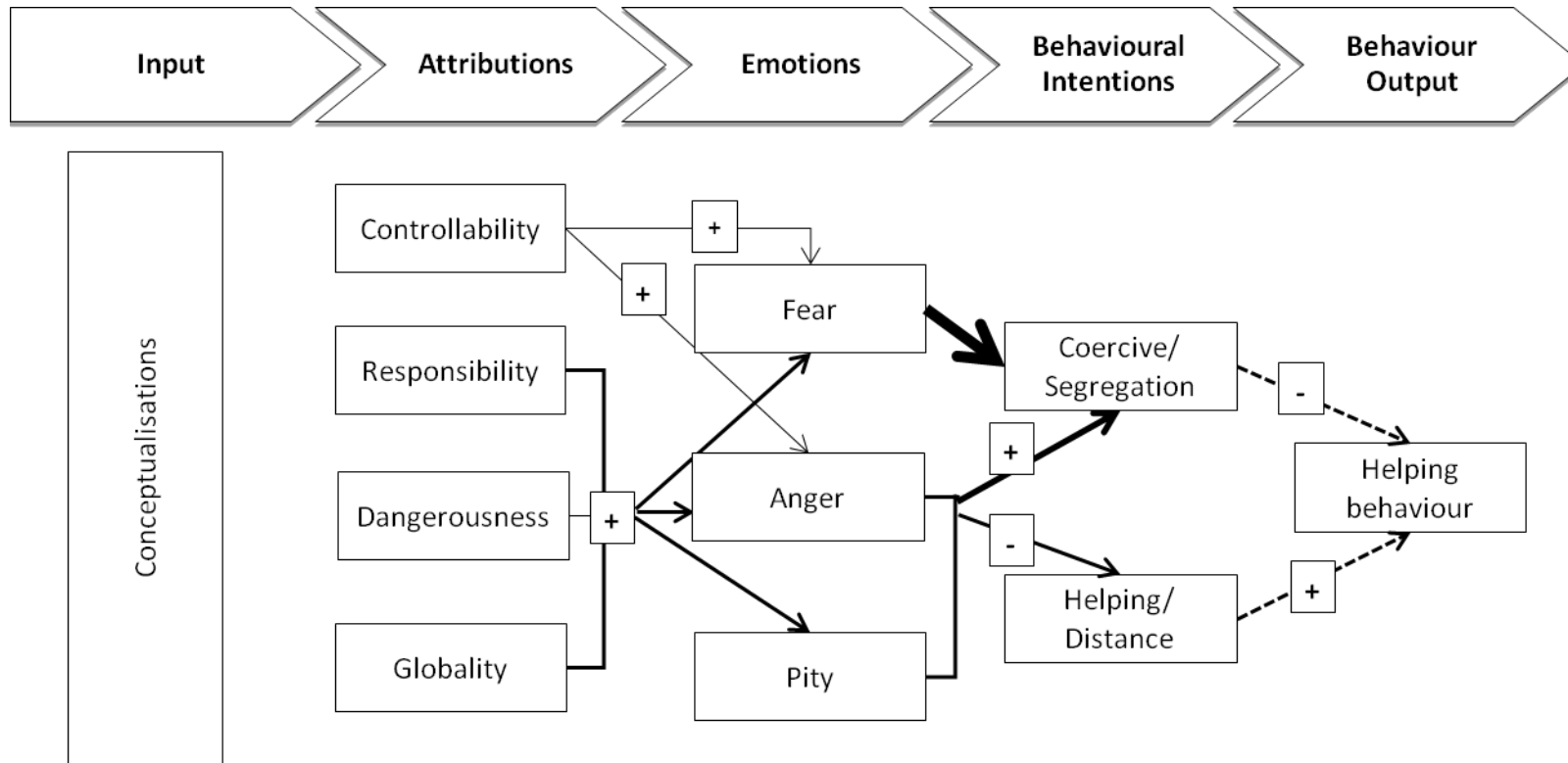


Figure 4. Schematic Representation of an extended attribution theory model

Notes:  $\longrightarrow$  =  $r$  .1 to .2;  $\longrightarrow$  =  $r$  .3 to .4  $\longrightarrow$  =  $r$  >.5

## Discussion

### Primary Aim

This study's primary aim was to explore whether attributions, emotional responses and behavioural intentions towards voice-hearers were sensitive to differential conceptualisations of voice-hearing.

### Attributions

**Personal responsibility.** Analysis revealed that 'personal responsibility', was sensitive to the conceptualisations offered. For example, the medical conceptualisation group considered the voice-hearer presented in the vignette to have less personal responsibility than the cognitive conceptualisation group. However, no other attributions were sensitive to the conceptualisations offered. This may be due to the design of the study (e.g., the use of a brief hypothetical vignette). It is hypothesised that attributions would be more apparent when information is (1) presented in formats that encourage greater engagement and depth of processing and/or (2) delivered in a more ecologically valid format (i.e., rather than in the context of a hypothetical case description). Despite these limitations, the results of this study are in line with recent results of a meta-analysis that suggests biogenetic conceptualisations reduce personal responsibility, relative to other/no conceptualisations (Kvaale et al., 2013).

Previous research has suggested that psychosocial conceptualisations increase attributions of personal responsibility and controllability and decrease attributions of dangerousness (e.g., Lincoln et al., 2008; Read, 2007). The results of this study indicate that the picture is more complex than previous research would suggest. This research divided psycho-social into two theories: (1) Cognitive (2) Systemic, which underpin CBT and FI, and are recommended in NICE guidelines. However, there were no clear differences between CBT and FI conceptualisations on attributions, emotional and behavioural responses.

**Dangerousness.** The current study indicated that attributions of dangerousness were not sensitive to differential conceptualisations. However, a recent meta-analysis (e.g., Kvaale et al., 2013) concluded that attributions of

dangerousness were sensitive to biogenetic conceptualisations.<sup>31</sup> One hypothesis as to why the current study did not find any significant results for attributions of dangerousness may be due to the absence of psychiatric labels within the biogenetic vignette, and standardised symptom-specific experiences across all five vignettes. The results therefore appear to support findings from previous research (e.g., Lincoln et al., 2008) that it may be the label schizophrenia increases attributions of dangerousness but this requires further exploration. However, it may be useful to focus on symptom-specific experiences in future anti-stigma research and campaigns.

**Locus of Causality.** The results outlined in table 2 demonstrate that attributions of 'locus of causality' were sensitive to differential conceptualisations, which appeared to prime participants' responses. For example, the biological group assigned locus of causality to internal factors: 'chemical imbalance in the brain' and 'genetic factors' but not to 'own character'. The Cognitive and FI group were more likely to assign locus of causality to external factors: 'way he was raised' and 'stressful life-experience' than the other three groups. The control group's only statistically significant finding was that they assigned the locus of causality of John's voice-hearing to 'own character'. These results need to be considered when designing psycho-educational programmes aimed at reducing stigma associated with mental illness. Previous research has explored the differences between medical and psychosocial conceptualisations, using non-standardized vignettes (e.g., Walker & Read, 2002). This may have primed participants to subtle nuances across the vignettes provided, which may have been reflected in the differences in the findings reported. This study sought to overcome that limitation by using standardised vignettes.

## **Emotional Responses**

Emotional responses were not statistically significant across conceptualisations. However, the emotional response of 'fear' seemed more sensitive to differential conceptualisations than other emotional responses were. The control group was more fearful than other groups (as outlined in Table 1). This difference could possibly highlight the impact of offering a conceptualisation over no conceptualisation. It was also interesting that the biogenetic group

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<sup>31</sup> See extended discussion chapter for a detailed discussion on the research that has explored attributions of dangerousness



recorded the lowest response to fear. This is contrary to previous research, which has explored emotional mediators, and found that biological conceptualisations increased the likelihood of a fearful response, due to a strong correlation with perceptions of dangerousness (Jorm et al. 2012).

### **Behavioural Intentions and Outcomes**

The results of the current study indicate that behavioural intentions or behavioural outcomes were not sensitive to the conceptualisations offered. These results would seem to add weight to the argument that biogenetic conceptualisations do not result in negative attributions, emotional responses or behavioural intentions in comparison to other conceptualisations. Previous research has been divided as to whether biogenetic conceptualisations increase social distance and thus are more stigmatising. However, there were some limitations to this study and it is important that it be replicated with these limitations addressed.

### **Secondary Aim**

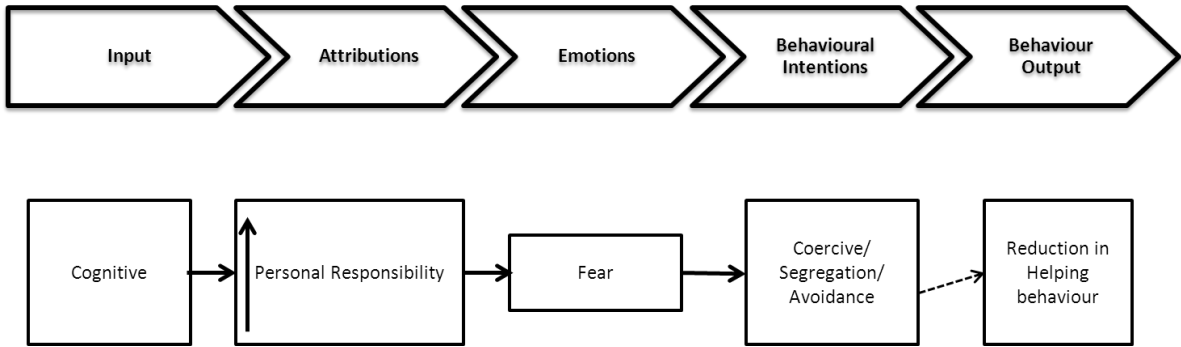
The secondary aim was to test the attribution theory model<sup>32</sup> and identify attributions and emotional mediators that influence behavioural intentions. To test this aim, a mediation model was used (see Field, 2013 for a full description of this process). The results of the current study found that stability had neither a direct nor a significant indirect effect on emotional responses and was therefore excluded from the model outlined in figure 4.

The emotional response of fear was the strongest mediator of coercive behavioural intentions. However, fear is frequently overlooked as a mediator of behavioural intention and previous research has often highlighted the role of anger or pity to predict behavioural intentions (Corrigan & Shapiro, 2010). When the attribution of personal responsibility was identified, it was the emotion 'fear', which mediated behavioural intentions (see figure 5). However, previous research indicates that anger or pity were the two emotional mediators (Corrigan et al., 2003; Corrigan & Shapiro, 2010) that most influenced behavioural intentions. Therefore, the results from the current study contradict the assumptions made

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<sup>32</sup> Locus of causality was excluded from this discussion, as it could not be categorised into internal or external factors, which is a flaw of the attribution model. However, it was analysed and presented in the extended results chapter C.1.2., and discussion D.1.2.

within the research literature. It is important to note that the FI group responses did not increase personal responsibility, which could infer that this group did not view the voice-hearer as either low or high in personal responsibility for his voice-hearing experiences. This therefore may indicate that systemic theory, which underpins FI may be the least stigmatising approach. However, it may also be the case within the current study that this conceptualisation was inert given that no significant difference was found between FI and the other groups. Future research is required to explore this conceptualisation further.



**Figure 5. Pathway from a cognitive conceptualisation through to behavioural output**

This study found that the emotional response of fear was present in eight out of the ten mediation analyses. Conversely, ‘sympathy/concern’ was only recorded in one mediation model and did not reach the threshold for a small-sized effect. Pity only appeared in three out of ten mediation analyses. Many studies that have used the attribution questionnaire have grouped together pity, sympathy and concern under one construct. However, in the current study, pity and anger were similarly scored and not pity with sympathy/concern. This may be due to how the word ‘pity’ has changed semantically in the forty years since the term was first used in attribution theory when pity was considered synonymous with sympathy and compassion (Weiner, et al., 1982). Sympathy continues to be associated with compassion and has been defined as an emotional reaction to another's emotional state or presentation that involves feelings of concern and sorrow for the other person (Goetz, Keltner & Simon-Thomas, 2010). Conversely, the term pity is now associated with a feeling of being more superior than the

person being pitied (Goetz, et al., 2010). It is hypothesized that this sense of being different (i.e., more superior) may be involved in the process of stigmatisation, but this requires further exploration. This study has underlined the importance of the need for the attribution questionnaire to evolve and be fit for purpose in the 21<sup>st</sup> Century.

Mediation analysis revealed that the relationship between personal responsibility and emotional responses (i.e., fear and anger) was stronger than the relationship between controllability and emotional responses (i.e., fear and anger). For example, when voice-hearers are considered to have more personal responsibility, the emotional response of fear is increased, which reduces helping behaviours and increases coercive behaviours. These findings challenge previous literature reviews that suggested that biogenetic conceptualisations produced a more fearful response than psychosocial conceptualisations (Read, 2007).

Additionally, the pathway from personal responsibility demonstrates that the indirect effect is stronger in this domain than controllability. However, this requires further exploration. Corrigan's attribution questionnaire combined controllability and personal responsibility into one construct (Corrigan et al., 2003). Willner and Smith (2008b) made a distinction between these two constructs. The results of this study support the importance of this distinction.

Attribution theory is useful for understanding and predicting behavioural intentions. This study also added an additional step (a behavioural outcome measure) to enhance attribution theory. However, the relationship between behavioural intentions and outcomes only achieved a small-to-medium sized effect. Previous research reported large- sized effects for behavioural intention and predicted small-to-medium sized effect for actual behaviours (e.g., Ajzen & Madden, 1986; Webb & Sheeran 2006). However, the behavioural outcome measure used in the current study could be considered to have been too simplistic and require exploration<sup>33</sup>.

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<sup>33</sup> See critical reflection E.1. for epistemological, methodological and theoretical considerations

## Strengths and Limitations

This study has a number of strengths. It is the first study to explore whether attributions, emotional responses and behavioural intentions towards voice-hearers are sensitive to differential conceptualisations of voice-hearing. Moreover, this study addressed many limitations of previous research. For example: a large sample was recruited from multiple sources and had a wide age range; standardised vignettes were used, which were assessed as easy to read; diagnostic labels were not used (there is some contention across the literature as to whether diagnosis is sufficient to produce stigmatising responses); constructs that are no longer semantically related were separated, which improved the internal reliability of the attribution questionnaire; and a behavioural outcome measure was included, as recommended by other authors (e.g., Jorm & Griffiths, 2008).

However, this research has the limitations of quantitative research (Robson, 2002). Firstly, opportunities for qualitative data collection may have been useful, e.g., the use of free text boxes would have given participants an opportunity to provide additional information. Secondly, participants responded to a hypothetical vignette that was devoid of contextual factors (e.g., location, the voice-hearer's behavioural presentation). Therefore, we cannot say with certainty, whether participants would respond in the same way in real-life situations, although the first author did attempt to elicit a real-life behavioural response by including a behavioural outcome measure. However, the behavioural outcome measure may have been too simplistic and therefore results should be considered with caution, as it merely captured whether participants agreed to share an email address to meet a researcher, 'Bill', and we were unable to capture the rationale for participants' responses. Thirdly, over the half the population (92%) sampled were White British, so it is possible that national differences were not captured.<sup>34</sup>

Finally, the first author included all vignettes and a statement within the debrief that voice-hearing was a common experience. This was to encourage participants to view voice-hearing as a normal, rather than a stigmatising, experience. Therefore, it would have been useful to explore the impact of this

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<sup>34</sup> See extended discussion chapter D.1.4.2. for a detailed discussion on the impact of nationality on attributions of dangerousness and D.1.6 for further limitations

debrief by repeating the questionnaire to see whether attributions, emotions and behavioural intentions were changed by this debrief.

### **Future research**

In order to address the limitations of this study, or to generalise the findings, it is important for this study to be replicated. Furthermore, it would be advantageous to adopt a more systematic approach to recruitment in order to reach ethnic minority groups, as this will enable the exploration of cultural variations.

It may also be useful to capture qualitative data in a number of areas, for example participants' prior knowledge and understanding of voice-hearing; or the sources of information to which participants are subject (e.g., media) and which might influence attributions. Furthermore, allowing participants to insert their own beliefs related to locus of causality, would allow for the identification of additional areas, which may not have been considered by previous studies and upon reflection may be considered a limitation of the current study. Additionally, it may be preferable to replace vignettes with a more realistic representation of voice-hearers e.g., using an alternative medium, such as a film depicting events and experiences which voice-hearers may encounter.

Finally, it may be useful to explore whether the debrief, which gave multiple perspectives of voice hearing, altered participants' attributions, as this would highlight the impact of psycho-education.

### **Clinical implications**

These results have a number of implications: Firstly, for anti-stigma campaigns (e.g., exploring symptom-specific experiences); secondly, for guiding information provided within mental health services (e.g., priming effects of information provided to mental professionals, service users and carers); and finally, for supporting voice-hearers in developing a broad understanding of voice-hearing (to offer multiple-conceptualisations). A recent study (Lofgren, das Nair & Hewitt, 2013) found that clinical psychologists do not seem to offer a conceptualisation of mental illness to service-users, allowing service-users to offer their own conceptualisation when formulating their symptoms.

In terms of clinical implications, the findings from this study may support techniques and messages that seek to externalise or place personal responsibility in a broader context. In this respect, FI/systemic techniques<sup>35</sup> and conceptualisations might be expected to be helpful: the FI message in this study did not have a perceptible effect (vs. neutral message) but in principle the pathway from personal responsibility suggests that reducing perceived personal responsibility should lead to reductions in fear/stigma. This is important in terms of public messaging/education, but also perhaps has implications for self-stigma (e.g., perhaps externalizing responsibility in the clinic - helping to understand problems in context of historical and current environment or broader systems - may reduce fear and self-punitive/isolative tendencies in clients/people who present with voices). While this would need to be tested further, there is practice-based evidence for example, the helpfulness of externalising techniques in fostering acceptance within family interventions (e.g., Carr, 2000, Griffin, 2003; Silver, Williams, Worthington & Phillips, 1998).

This study also tested the predictive validity of attribution theory. This is an applied psychological theory, which underpins psychological formulation and could be considered to be the mechanism, which fosters understanding within clinical practice. It can be used during assessment, formulation, intervention and evaluation stages of therapy. Providing alternative conceptualisations may support behavioural change within this model, as it has been highlighted that attributions influence emotions, which mediate behavioural intentions, which precede behavioural outcomes (as outlined in figure 3). Therefore, attribution theory continues to be useful for understanding the nuances of how people make sense of other people's behaviour.

This study found differences between biological and cognitive conceptualisations. This has implications for MDT working, in that teams may be divided between medical and psychological conceptualisations, which ultimately could impact on how teams communicate with service-users. It may be advantageous for future research to explore the clinical implications within an MDT context and to explore whether teams can integrate these approaches within a

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<sup>35</sup> See extended results chapter C.1.2. for a series of mediation analyses that explore the relationship between locus of causality variables and behavioural intentions. This did not produce a direct or indirect relationship. See extended discussion chapter D.1.2 for an extended discussion of the impact of causal explanations on behavioural intentions

bio-psycho-social framework as depicted in the FI vignette. This is in line with British Psychological Society ([BPS], 2000) recommendations for working in mental health teams.

Mental health services and public health campaigns are constantly looking to change stigmatising attitudes towards those perceived to have a mental health difficulty. Corrigan and Shapiro (2010) argue that Clinical Psychologists are highly skilled and appropriately trained and they would be well placed to offer a range of services. For example: (a) developing public health awareness and devising anti-stigma campaigns; (b) challenging assumptions within mental health services and provide psycho-education for health-care professionals on understanding a range of symptoms using psychological conceptualisations; (c) providing psycho-education from a range of conceptualisations, to empower service-users in developing their own narrative about the aetiology, maintenance and treatment of their voice-hearing experiences; and (d) using an attribution model and research within their clinical practice to understand the impact of stigmatisation on voice-hearers' life experiences.

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### **Rationale for Choice of Journal**

It was important to identify the journal that the current study would be suitable for and to maximise dissemination. The present study explored public attitudes towards voice-hearers, as well as testing out an attribution theory model, which has been used to identify the causal mechanisms that underpin stigmatising attitudes. *Clinical Psychology: Science and Practice*, is a well-established American journal, which has published an array of articles on stigmatising attributions of mental health problems (Corrigan et al., 2000). Corrigan is a leading author on mental health stigma and has published many articles within this journal, all relating to stigma associated with mental illness, and which are widely cited. His most popular article: 'The paradox of self-stigma and mental illness' (Corrigan & Watson, 2002), received 598<sup>36</sup> citations. This journal has an impact factor of 4.4 and in 2012 was ranked ninth out of 114 journals. This compares favourably with the *British Journal of Clinical Psychology*, which has a lower impact factor (2.333) and was placed 30<sup>th</sup> in the ranking table.

Taking into account the journal's impact factor score and previous publications of stigma and mental illness, it is anticipated that the editors would consider the present study to be appropriate for publication.

*Clinical Psychology: Science and Practice* does not enforce a word limit on manuscripts. However, they do impose a limit of 960 characters (approximately 120 words) for the abstract. Author guidelines can be found at appendix I.

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<sup>36</sup> 598 citations as of 20<sup>th</sup> July 2014

## **Background Literature Chapter**

### **A.1. Introduction**

This study focuses on voice hearing, which has been commonly associated with a diagnosis of schizophrenia as outlined in the Diagnostic Statistical Manual, fourth edition ([DSM-IV], American Psychiatric Association [APA], 2000).

Therefore a historical overview of schizophrenia is provided alongside models of psychosis<sup>37</sup> (e.g., medical, cognitive and family intervention conceptualisations), before moving on to explore attitude theories and more specifically, stigmatising attitude models. This is followed by an overview of attribution theory and its usefulness within the research arena.

The author acknowledges that not all conceptualisations used within mental health services are explored. The rationale for this is due to their exclusion from NICE guidelines for voice-hearing.<sup>38</sup> This chapter concludes by discussing the extended aims and clinical implications of this study.

#### **A.1.1. Historical Overview of Schizophrenia**

The concept of ‘voice-hearing’ has not always been viewed as a symptom of a mental disorder. Accounts of voice-hearing experiences can be tracked back to people considered influential in the religious community (e.g., Moses & Jesus). However, since the 19<sup>th</sup> century, voice-hearing has been considered to be a symptom of mental illness and very little has changed since Blueher first coined the term ‘schizophrenias’. Blueher’s (as cited in Bentall, Jackson & Pilgrim, 1988) concept of schizophrenias, which was used in the DSM’s first edition, was viewed as a disease in which splitting or dissociation processes occur. Blueher did not consider voice-hearing to be a central component of this definition. It was Schneider (1959, as cited in Morrison et al., 2004) who made the distinction between first rank symptoms (delusions, hallucinations) and second rank

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<sup>37</sup> The terms mental illness, psychosis and schizophrenia will be used interchangeably throughout this thesis

<sup>38</sup> NICE suggested recommendations for mental health professionals working with voice-hearers to use Schizophrenia Guidelines, which can be found at <http://www.nice.org.uk/CG82>

symptoms (e.g., catatonia). The current DSM-IV continues to use Schneider's definition of ranking symptoms in the diagnosis of schizophrenia.

### **A.1.2. Overview of Current Classification of Schizophrenia**

DSM-IV-TR, (APA, 2000) considers schizophrenia to be one type of psychotic disorder and not, as often misrepresented, an umbrella term for psychotic symptoms. There is no consensus or acceptable definition of the term 'psychotic'. DSM-IV-TR (APA, 2000) attempts to define 'psychosis' by the presence of positive symptoms (e.g., hallucinations, delusions). Currently there are eleven types of psychotic disorders, which include symptoms such as delusions, disorganised speech and hallucinations (APA, 2000). Schizophrenia is considered to be a major mental illness and is characterised by two clusters of symptoms: positive and negative symptoms (van der Gaag, 2006). Negative symptoms are associated with emotions, usually a flattening of affect, whereas positive symptoms represent a change in behaviour or thoughts, such as hallucinations or delusions (National Health Service [NHS], 2013). Delusions are considered to be "a belief held with complete conviction, even though it is based on a mistaken, strange or unrealistic view" (APA, 2000). Hallucinations are viewed as sensory experiences (e.g., smell, visual, tactile and auditory), which cannot be discriminated from objective sensory experiences (Oyebode, 2008). This study focused on one sensory experience: Auditory hallucinations,<sup>39</sup> which are defined as a perception of an experience that seems real for the individual but does not actually exist (APA, 2000). For example, the individual may hear a voice that (a) gives an instruction; (b) is a conversation between multiple voices; (c) offers a running commentary on the person's actions; and (d) is a combination of any or all of these.

Slade and Bentall (1988) reported that over 60% of people diagnosed with schizophrenia experience auditory hallucinations. These results are unsurprising, given that hallucinations are a central component of the diagnostic category of schizophrenia. This may be one reason why the majority of research on auditory hallucinations focuses specifically on those diagnosed with schizophrenia. However, auditory hallucinations are also linked to a large number of other

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<sup>39</sup> Auditory Hallucination is the psychiatric term for voice-hearing. This Background Literature Chapter uses both terms interchangeably.

disorders e.g., bipolar disorder, dissociative identity disorder, manic depression, alcohol withdrawal, stimulant intoxication and neuro-cognitive disorders (APA, 2000).

### **A.1.3. Prevalence Rate of Schizophrenia and Voice-Hearing**

The World Health Organisation identifies schizophrenia within their top ten medical disorders causing worldwide disability, with a prevalence rate of 1% (Jablensky, 2000). Several studies have also identified that one in a hundred people within the Western population hear voices (e.g., Johns et al., 2002; Tien, 1991). A recent systematic literature review reported prevalence rates to be higher with the median prevalence rate to be 13% (Beavan, et al., 2011). However, the authors identified a number of methodological limitations. Given the wide range of prevalence rates recorded in epidemiological studies, it was unsurprising that DSM-IV (APA, 1994) was modified resulting in changes to the definition of hallucinations, in an attempt to reduce medicalising or pathologising these experiences for people within the general population. DSM-IV-TR (APA, 2000) stated that there are experiences that should be considered within a normal range, such as occasionally hearing one's name being called when it has not actually been called.

### **A.1.4. Diagnostic Categories**

There is still an on-going debate surrounding the validity of the diagnosis of schizophrenia (e.g., Boyle, 2007, Read, et al., 2004b). For example, diagnostic categories can be based on a range of symptoms, which means that two individuals may not experience any symptoms in common, but may have been labelled with the same diagnosis (Boyle, 2007). In addition, DSM-IV's criterion B explicitly seeks to determine whether the individual is exhibiting psychological distress as a symptom of a disorder rather than as a result of the disorder (Stein et al., 2010).

While there is on-going debate surrounding diagnosis there, appears to be a mixture of outcomes from service users on receiving a mental health diagnosis (Pratt, Halliday & Maxwell 2009). For some service users, gaining a diagnosis is important, as it offers them access to mental health resources that would otherwise be unavailable. However, other service users have reacted negatively

upon receiving the label; reporting a feeling of being reduced to their diagnosis, which can affect mood and sense of self. Other service users reported that they felt stigmatised and their diagnosis led to negative assumptions from professionals (King et al., 2007). Furthermore, there are implications for recovery as the diagnosis of schizophrenia is often met with pessimism, as it is wrongly considered that psychotic symptoms will be a permanent condition (BPS, 2000). Thus, the categorical model of DSM-IV offers a deterministic view of this disorder and prognosis is considered poor. The BPS urged the authors of DSM-5 to make further modifications, by replacing the categorical approach to diagnosis with a dimensional approach in order to normalise voice-hearing experiences (BPS, 2011).

Diagnostic labelling has been used in many anti-stigma campaigns as a way of promoting schizophrenia as an illness like any other, in an attempt to highlight that mental illness can affect anyone at any time and is beyond the person's control. The biogenetic model has heavily influenced previous anti-stigma campaigns, and is the basic premise for future campaigns, but with the addition of psychosocial factors (Royal College of Psychiatry [RCP], 2011). Public attitude studies have found that the general public also use diagnostic labels when faced with information about a person portrayed with a mental illness (Jorm & Griffiths, 2008). However, others would argue that these labels are sufficient to produce a stigmatising response. Bentall, a leading researcher and author on psychosis (e.g., Bentall, 2013), has urged researchers and clinicians to move away from diagnosis and to focus on a 'complaint': An experience, which causes distress (Bentall, 2000). This study will focus on one such experience: That is voice-hearing.

### **A.1.5. Models of Voice-Hearing**

**A.1.5.1. Biochemical factors.** Biochemical factors are thought to be a causal factor in the development of schizophrenia. To support the biochemical model, Jacobsen (1986) highlighted how the drug chlorpromazine, originally used as an anaesthetic, was found to reduce psychotic symptoms. This discovery led the medical profession to offer a neurobiological explanation of schizophrenia and its psychotic features. The Dopamine hypothesis (as outlined in Haracz, 1982)

argued that people who exhibit psychotic features have a hypersensitive dopamine receptor, which influences the neurotransmitters in the brain. This hypothesis proposes that dopamine and dopaminergic mechanisms are crucial in understanding the psychotic symptoms associated with schizophrenia. This remains an enduring idea about the illness. However, there are limitations to the original dopamine hypothesis, as it is based on two types of indirect evidence. Firstly, from exploring the effects of medication (e.g., neuroleptics or tranquilisers) originally used to treat schizophrenia and secondly, from researchers who claimed that illicit drugs, such as amphetamine, could make the disorder worse by increasing dopamine levels. In the 1970s it was discovered, during post-mortems on people with schizophrenia, that there was an increase in dopamine in the brain. However, this increase may have been due to the drugs that had been used to treat schizophrenia (Read, Goodman, Morrison, Ross & Aderhold, 2004a). The drugs were thought to cause a blockage in the system that regulated dopamine and at the same time triggered a compensatory strategy to override the blockage (Haracz, 1982). In post-mortems, dopamine levels in people with a diagnosis of schizophrenia who had not been given neuroleptics, were within the normal range (Haracz, 1982).

The dopamine hypothesis has resulted in a range of pharmacological interventions (e.g., prescribing neuroleptics) as the primary treatment strategy in the management of symptoms in schizophrenia (Stefansson et al., 2009). Pharmaceutical companies have campaigned for the use of various anti-psychotic medication to be added to the prescribed list of medication available. This reinforces the concept of voice-hearing as a biological illness, which will respond to drug treatment (Mosher, Gosden & Beder, 2013). Medication is still considered the first treatment option, with psychological therapies being added later, though the emphasis on psychological therapies was originally aimed at promoting pharmacological treatment compliance.

**A.1.5.2. Genetic factors.** A number of studies have investigated psychotic and mood disorders and have concluded that these disorders frequently occurs within families (e.g., Baron, Gruen, Asnis & Kane, 1982; Frangos, Athanassenas, Tsitourides, Katsanou & Alexandrakou, 1985; Gershon et al., 1982; Pope & Yurgelun-Todd, 1990). Furthermore, some genetic studies have shown



statistically significant evidence that people are at an increased risk of developing psychotic features if they have relatives with a mood disorder (Valles et al., 2000). However, this does not identify a genetic marker, but merely identifies that there is a correlation between family histories of symptoms associated with schizophrenia and mood disorder. Cardno, Rijsdijk, Sham, Murray, and McGuffin (2002) conducted a twin study and found a genetic susceptibility. They suggested that specific genes are implicated in the aetiology of psychotic disorder. However, others argue that susceptible genes may be responsible for a varied expression of symptoms e.g., psychotic or mood symptoms. An example of this is the Maudsley triplets study, where two out of three triplets had a diagnosis of schizophrenia and one had a diagnosis of bipolar disorder (McGuffin, Reveley & Holland, 1982).

Studies (e.g., Tienari et al., 2003) that explored adopted children whose parents have a diagnosis of schizophrenia, have attempted to separate biological and environmental factors, as the biological parents are not the rearing parents. Tienari et al. (2003) concluded that there was a genetic link for schizophrenia. However, Tienari later acknowledge that post hoc analysis revealed that the results may not have been statistically significant (Tienari et al., 2004). A systematic literature review (Mäki et al., 2005) found no evidence of a genetic marker and indicated that results from previous studies are inconclusive. At present, molecular genetic research has failed to find a genetic marker directly related to schizophrenia. Furthermore, the heterogeneous nature of schizophrenia may mean that it is possible that both genetic and non-genetic forms exist (World Health Organisation [WHO], 1998).

In summary, biochemical and genetics approaches seeks to provide a definition of voice-hearing as an illness, which should be treated by anti-psychotic medication.

**A.1.5.3. Psychological approaches to voice-hearing.** Psychological approaches aim to understand the distress caused by voice-hearing experiences and to develop a formulation-based approach to understanding its development and maintenance. The formulation then provides a framework for reducing the associated distress of voice-hearing experiences. There is a wealth of evolving psychological research aimed at promoting an understanding of the development

of voice-hearing. The author acknowledges that there are other psychological interventions for working with voice-hearers, for example, psycho-dynamics (e.g., Prouty, van Werde & Portner, 2002; Siani & Sicilian, 2000; Silver, Koehler & Karan, 2004), but these are not explored as part of this study. Two psychological interventions will form the focus of the discussion here: Family Interventions and Cognitive Behavioural Therapy. These interventions are recommended by NICE guidelines. Family Intervention conceptualisations are rooted in systemic theories (e.g., expressed emotions). Although systemic theories do not explore the aetiology of voice-hearing as such, they have hypothesised that expressed emotions could be considered to be a stressor and have linked this hypothesis with the Stress Vulnerability Model (Zubin & Spring, 1977). Wearden, Tarrier, Barrowclough, Zastowny, and Rahill (2000) suggested a link between expressed emotions in the aetiology of schizophrenia and other mental health and physical health problems. On the other hand, cognitive conceptualisations explore the role of inner-speech, source monitoring, memory models and the influence of traumatic life experiences on cognitive functioning.

**A.1.5.4. Cognitive theories of voice-hearing.** There are many cognitive conceptualisations of voice-hearing, which explore the role of ‘inner speech’. Leudar, Thomas, McNally and Gliniski (1997) found that voice-hearers reported that this inner speech manifested as another person’s voice that made comments or issued instructions. Bentall (2003) proposed that inner speech captures how everyone covertly makes comments, makes plans for the things we have to do, or reminisce over things we have done. Furthermore, Morrison and Haddock, (1997) proposed that voice-hearers misattributed their ‘inner-speech’ process to another source, which would indicate a source-monitoring problem. Subsequent research has investigated source-monitoring difficulties (e.g., Morrison, Frame & Larkin, 2003; Waters et al., 2012), and it has been suggested that cognitive deficits may have a role to play in voice-hearing experiences including self-source-monitoring deficits, which means that the person misattributes voices to internal or external sources.

An alternative cognitive explanation of voice-hearing is that of ‘memory models’ (Waters, Badcock, Michie & Maybery, 2006). These explore hearing voices as an “unintentional activation of the stored representations that the patient

fails to inhibit or detach from” (Waters et al., 2012 p.554). The content of these stored representations is often based on childhood trauma memories. The memory model also highlights the emotional component as a triggering factor for eliciting the voices that people experience. Source monitoring difficulties may act as a defence, which protects the person from re-living past distress, by disguising the original source e.g., childhood trauma in the past, which is then experienced as an external event (Read et al., 2004a). Source-monitoring conceptualisations therefore, may represent an amalgamation of both cognitive and psychodynamic processes (Silver et al., 2004).

Traumatic life experiences are considered within the cognitive model to be the critical incidents that occur within the lives of children, which can alter the way children view themselves, others and the world around them. Within the literature, the term childhood trauma encapsulates a wide range of traumatic events, which include sexual, physical, emotional abuse and bullying (Bebbington et al., 2004). Many researchers (e.g., Morrison et al., 2003; Resnick, Bond & Mueser, 2003); have attempted to understand the role of traumatic life events, particularly in childhood, in the development and maintenance of voice-hearing. Despite a number of methodological limitations, a systematic literature review concluded that childhood sexual abuse was considered to be a causal factor in the development of auditory hallucinations (Read, Os, Morrison & Ross, 2005).

Researchers have claimed that experiencing traumatic events in childhood is associated with the development of psychosis (e.g., Morrison et al., 2003), with sexual and physical abuse in childhood having been directly linked to voice-hearing (Read et al., 2005). May-Chahal and Cawson (2005) estimated that the prevalence rates for childhood, sexual abuse were around 11% and physical abuse approximately 24% within the general population. However, there are higher prevalence rates in a psychiatric population, especially in those diagnosed with psychosis and schizophrenia. For example, service users who experienced traumatic childhood abuse were almost twice as likely (35%) as non-abused service users (19%) to have two or more of the ‘characteristic symptoms’ of schizophrenia (Read, Agar, Argyle & Aderhold, 2003). However, these results should be viewed with caution, as there were a number of methodological limitations in collecting the data. For example, data was derived from service users’ medical files, and some entries were devoid of context, and did not indicate

whether the nursing team had asked or followed up on issues related to childhood abuse.

Traumatic experiences have been found to be associated with hearing voices in people who have not accessed mental health services (Romme & Escher, 2006). This implies that traumatic childhood experiences are considered to be involved in the development of voice-hearing experiences in both service-user and non-service user groups. However, what appears to differentiate service-users from non-service-user groups is the individual's ability to cope with both the traumatic experiences and hearing-voices. What cognitive researchers do not explain are instances (1) where people who have been abused do not experience psychotic symptoms or (2) where voice-hearers have no history of trauma. Romme and Escher (1989) argued that vulnerability to developing psychotic features appeared to be influenced by both traumatic events and the individual's ability to cope with stress.

**A.1.5.5. Systemic theories of voice-hearing.** Systemic theories of schizophrenia emerged in the 1950s when the Medical Research Council sought to investigate the relationship between relapse rates of patients discharged from psychiatric hospitals and their living conditions (e.g., high expressed emotion in family members). An association between relapse rates and living conditions (i.e., families with high expressed emotion) was found for people diagnosed with schizophrenia (Leff & Vaughn, 1985; Vaughn, 1989). This research has been ongoing for over thirty years and has established firmly the relationship between expressed emotion in family members and the duration and course of schizophrenia (for a detailed history see Brown (1985).

The measures of expressed emotion were developed from a number of studies conducted by Brown (1985) who was interested in measuring the range of emotions and attributions within common family interactions. Expressed emotion explores scales of: criticism; hostility; emotional over-involvement; warmth and positive comments.

A number of replication studies have tested the relationship between expressed emotion and mental illness. Kavanagh (1992) conducted a review of 23 studies, which monitored patients suffering from a psychiatric illness. Only

three of the studies failed to find an association between expressed emotion and mental illness. Twenty studies found higher relapse rates in people who returned to live with families that were high in expressed emotion. A comparison of 23 studies, which encompassed 1,222 patients and their families, found the median rates for low and high expressed emotion families were 21% and 48% respectively. A meta-analysis (Butzlaff & Hooley, 1998) was also undertaken on 26 studies, which confirmed the predictive validity of expressed emotions.

Despite replication of the findings, it remains unclear whether expressed emotion is a causal factor in the development of voice-hearing (or other psychotic features associated with schizophrenia). However, Nuechterlein (1987) offered a detailed account of the complex interaction between individuals (biogenetic vulnerability) and their social environment (including expressed emotion). This explanation is not dissimilar to the stress vulnerability model, which has been used to explain the aetiology of schizophrenia. It therefore may prove a useful explanatory framework, which could consider high expressed emotions within the family as an environmental stressor.

**A.1.5.6. Stress vulnerability model.** Systemic theories do not infer causality or explain the aetiology of voice-hearing. However, Zubin and Spring's (1977) stress vulnerability model may offer a useful framework, since it proposes that there is a relationship between two variables: stress (ambient stress and life-event stress) and vulnerability. Stressors can either be in the form of negative (e.g., boredom) or positive factors (e.g., an exciting upcoming event). Many authors (e.g., Beavan & Read, 2010; Read et al., 2005; Romme & Escher, 2006) considered that people who have experienced psychotic symptoms, will have experienced traumatic life-events. Within this model, stress is considered a variable that influences the manifestation of symptoms. Although most people experience stress, this variable alone is not sufficient to act as a predictor of a psychotic episode.

Stress is a word that has been used to describe events that put a physical or psychological strain on the person. Despite being nearly 40 years old, the stress vulnerability model (Zubin & Spring, 1977) is still seminal to mental health practitioners (Gamble & Brennan, 2005). The model emerged as a result of the limitations of three perspectives, which explained the aetiology of mental illness:

(1) biological theories, which focused on forces originating from within the person's internal environment; (2) behavioural psychology, which focused on forces stemming from the experience of the person through learning and development; and (3) field theories, which focused on social factors.

Vulnerability is considered to be dependent upon two components: inborn vulnerabilities (e.g., influenced by genetics and neurophysiology) and acquired vulnerabilities (e.g., disease, perinatal complications, family experiences and life events). Within this model it is assumed that people with a wide range of stressors will put their mental health under strain, eventually reaching a level where their vulnerabilities will be expressed. However, most people are considered to have internal or external protective factors that safeguard them, which means that they may never reach the level of vulnerability necessary to develop psychotic features. Whereas those people who had a negative view of their family history; had more stressful life events; and cumulative stress were more likely to develop psychosis (Das, Malhotra, Basu & Malhotra, 2001). These findings support the stress-vulnerability model.

Heightened vulnerability to stress could be considered to lie at the core of the onset of psychotic symptoms (e.g., Read, Fink, Rudegeair, Felitti & Whitfield, 2008). Lardinois, Lataster, Mengelers, Van Os & Myin-Germeys, 2011) investigated the notion that traumatic life events in childhood may predict later onset of psychotic symptoms. They suggested that there is an association between childhood trauma and increased stress reactivity in people with psychosis.

However, not all people who have a traumatic event hear-voices. The stress vulnerability model would suggest that they have a higher level of tolerance to stress, or have better coping strategies for dealing with stressful events. Therefore, it may be considered that stress and vulnerabilities could lie on a continuum.

It has been argued (e.g., Read et al., 2008) that although the biological element assumes that everyone has a vulnerability to stress, the origin of vulnerability to stress could be explained in terms of genetics and/or related to perinatal factors and/or traumatic early life experiences. Therefore, it could be

argued that the stress-vulnerability model could offer a truly integrated account of biological, psychological and social perspectives (Read, et al., 2009).

Despite the range of conceptualisations used within mental health services, the biogenetic conceptualisation remains dominant and has been used within anti-stigma campaigns in an attempt to change public attitudes, perceptions and behaviours towards those who are seen as experiencing mental health problems, including voice-hearing. The literature on attitudes will be explored before going onto focus specifically on stigmatising attitudes and attributions towards voice-hearers.

#### **A.1.6. Attitudes**

The online Oxford Dictionaries' definition of an attitude is: (1) "A settled way of thinking or feeling about something;" (2) "A position of the body indicating a particular mental state" (Oxford Dictionaries, 2013). However, this definition does not define the purpose of, or the function that an attitude serves. Dovidio, Kawakami and Beach (2002), highlighted that attitudes function to allow people to make quick and efficient evaluations of a particular situation or event. Attitudes may be difficult to capture or measure as they could be considered a hypothetical construct. However, despite being hypothetical, some authors propose that attitudes can be studied by measuring individuals' observable behaviour presentation towards the attitudinal target (e.g., Ajzen, 2005).

A number of different theories have explored the formation of attitudes, including, genetic (e.g., Tesser & Martin, 1996), social learning (Bohner & Wanke, 2002), and environmental theories (e.g., Bornstein, 1989). The next section explores cognitive models of attitude development, although, a full review is outside the scope of this study.

**A.1.6.1. Cognitive theories of attitudes.** Cognitive and affective components are considered salient in the construction of attitudes (e.g., Eagly & Chaiken, 1995). Multi-component theories suggest that attitudes are a combination of cognitive, affective, and behavioural components (e.g., Reber, 1995). The first and most influential multi-component model was proposed by Rosenberg and Hovland (1960) and was adapted by Eiser and Pligt (1988) and is outlined in figure 6.

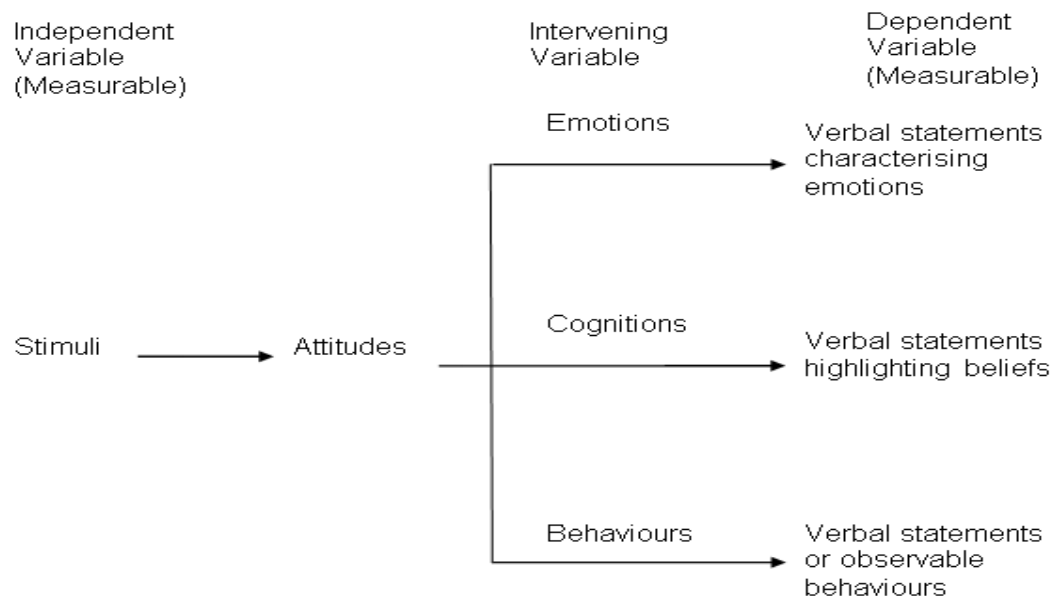


Figure 6. Rosenberg and Hovland's (1960) Three-Component Model of Attitudes, Adapted by Eiser and Pligt (1988)

This three-component model offers clear stages from stimuli that trigger an attitude. It breaks the attitude into three components: (1) emotions, (2) cognitions, and (3) behaviour, followed by an explanation of how these three areas can be measured. This model may be useful for conceptualising components of attitudes and ways to measure them. However, a limitation of this model is that it does not account for the association between components.

Attribution theory addresses this limitation by expanding upon the multi-component model by making an association between the three components. However, attribution theory is not a single theory, but encompasses many theories (Kelley & Michela, 1980). This is discussed later in the chapter (Section A.1.7.).

### A.1.7. Stigmatising attitudes

It is clear that there are wide-spread implications of stigmatising attitudes towards those perceived to have a mental illness. It is therefore important to explore models that identify how stigmatising attitudes influence emotions and behavioural responses towards those with a mental illness. For example, if we want to change people's behaviour towards those with a mental illness, we need



to know the drivers of stigmatising attitudes so that these can be targeted, thus reducing stigmatising responses.

Stigmatising attitudes have been extensively researched in a number of arenas since Goffman (1963) first proposed a model of stigmatisation. Goffman highlighted that the personal attributes of some individuals, which others find disturbing, are then tainted and discriminated against. Link et al. (1989) investigated the role of psychiatric labels on stigmatising attitudes, suggesting that a label elicits preconceived beliefs about those with a mental illness, which subsequently influences attributions towards those who have been labelled. Reber (1995) expanded upon Goffman's (1963) definition by adding that action stigma functions as a sign of disgrace, a blemish on a person's reputation, which sets a person apart from others and becomes a marker for difficult or aversive experiences. Stigmatisation of those with a mental illness is influenced by stereotyped attitudes and prejudices, which may be held by healthcare professionals and the general public (Rusch, Angermeyer & Corrigan, 2005), and is then absorbed by those who personally experience mental illness (Birchwood, Mason, MacMillan & Healy, 1993).

Once people have been set apart and marked out as different, it creates a sense of shame in those being stigmatised (Byrne, 2000). Link and Phelan (2001) highlight the importance of power and discrimination in stigma. They suggest that those with power and resources do not experience psychological distress by negative attitudes (e.g., lawyers make lots of money but can be lazy) towards their group, whereas people of low status and resources (e.g., people with mental health problems can be lazy) can result in their statements affecting these groups.

Research suggests that the general public have stigmatising attitudes towards those who experience mental illness with 80% of people agreeing with the statement 'most people are embarrassed by mentally ill people' (Huxley, 1993). An adaptive response to these stigmatising and shameful experiences is secrecy (Byrne, 2000). Secrecy is often cited as a common barrier for both service-users and General Practitioners (GPs) to discuss mental health issues (Docherty, 1997). Historically, issues with shame and secrecy resulted in a combination of cultural sanctions and myths, which aimed to ostracise mentally ill people from the community.

Stigmatisation is not only a burden for people who experience mental illness; it is also a clinical and public health issue (Corrigan, 2005). The behavioural manifestation of stigmatisation is discrimination and is cited by service users as the main source of social exclusion (Social Inclusion Unit, 2004). People with schizophrenia often report that the stigma is worse than the symptoms of the disorder (Thornicroft, 2006). Some people experience multiple types of discrimination due to their cultural background, ethnicity and/or sexuality (Shift, Care Services Improvement Partnership, 2008) and this can limit opportunities in a number of domains.

**A.1.7.1. Employment.** Unemployment is considered to be an important cause of social exclusion, low self-esteem and social isolation (Royal College of Psychiatry, 2010). Furthermore, unemployment is associated with low income, which may lead to a poor diet, which can impact on mental and physical health. Prolonged periods of unemployment have been associated with poor mental and physical health problems. Only 20% of service users who access specialist mental health services are in employment or education (Healthcare Commission, 2008). This may reflect inequalities within the labour market, as patterns of employment reflect and reinforce social status (Marmot Review, 2010). This indicates potential discrimination within the labour market, thus creating low employment rates amongst those perceived to have a major mental illness (Howard et al., 2010). However, this research does not explore reasons (e.g., hospitalisation) as to why 80% of participants may not be in employment. Furthermore, many of those who are experiencing symptoms of mental illness want to work, either in paid employment or in the voluntary sector (Sainsbury Centre for Mental Health, 2007).

**A.1.7.2. Physical healthcare.** Royal College of Psychiatry (2010) maintains that mental health underpins physical health. Mental illness is associated with an increased risk of developing physical illnesses. Conversely, physical illnesses can increase the risk of mental health problems. People with a diagnosis of schizophrenia experience physical problems and have a reduced life expectancy rate, dying on average 25 years earlier than the general population (Parks, Svendsen, Singer, Foti & Mauer, 2006). Furthermore, Saha, Chant and

McGrath (2007) conducted a systematic review and concluded that schizophrenia is associated with increased death rates in a number of areas: Cardiovascular diseases were two-fold in comparison with the general population; respiratory diseases were three-fold; and infectious diseases were four-fold.

**A.1.7.3. Violence, dangerousness and unpredictability.** Stigmatising attitudes may be influenced by the media, which has historically presented a distorted view of those who experience a mental illness, portraying them as dangerous, violent and unpredictable. In reality, only a small percentage (0.7%) of those who experience psychotic symptoms, exhibit violent behaviour towards others. This risk increases when people do not engage with mental health services (Nielssen & Large, 2010). The media portrayal can foster fear and promote stigma. However, those with a mental illness are more likely to be a victim of violence rather than a perpetrator, and are also more likely to be a victim of crime than members of the general public (Hiroeh, Appleby, Mortensen & Dunn, 2001).

#### **A.1.8. Social-Cognitive Models of Stigma**

Social-cognitive models explore the relationship between attitudes, emotions and behaviours. Corrigan (2000) explicitly explains (see figure 7) the signals that lead someone to perceive a person as having a mental illness. This then leads to stigmatising stereotypes, which in turn lead to discriminatory behaviour. However, Corrigan (2000) does not offer a causal explanation to explain this mechanism, i.e., why signalling events would lead to discriminatory behaviour. Attribution Theory offers a causal mechanism between attitudes and discriminatory behaviours.

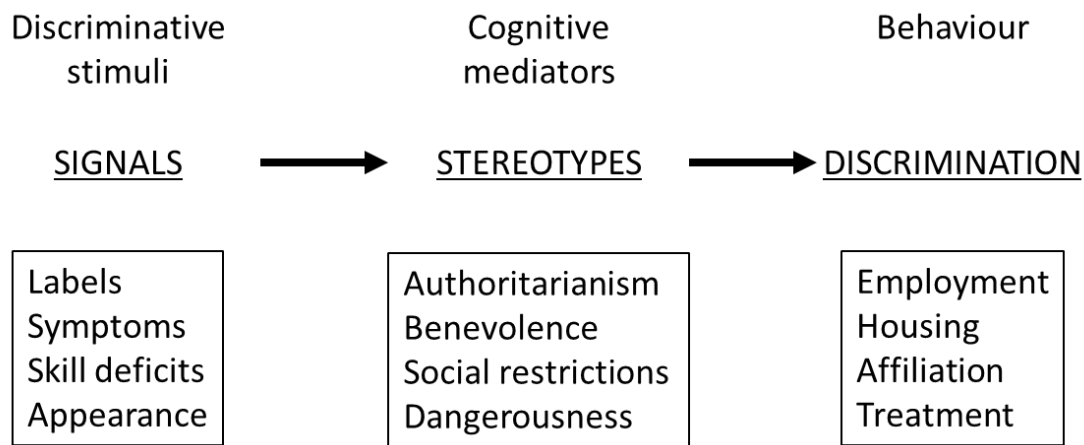


Figure 7. Corrigan's representation of the relationship between stigma signals (cues), stereotypes (attitudes) and behaviours (discrimination)

### A.1.9 Attribution Theory

**A.1.9.1. History of attribution theory.** Attribution theory has evolved since it was first conceptualised by Gestalt psychologists as 'Principles of Perceptual Organisation' (Wertheimer, 1923 as cited in Westheimer, 1999). Lewin (1935) proposed two components: Expectancy-value theory, and 'part-whole relationships'.

Expectancy-value theory proposed that the strength of motivation to perform an action is associated with the reinforcement-value of the goal and the expectancy of achieving that goal. Rotter (1954) developed Lewin's Expectation-Value theory by adding a personality element, and proposed that 'locus of control' was influential in determining whether expectancy-values led to success or failure. Locus of control is a bilateral construct: External (e.g., success is determined by factors such as luck or being supported) and internal (e.g., success is determined by factors such as effort or ability). However, Weiner (1990) noted that individuals often tend to attribute failure to external factors and success to internal factors.

The second of Lewin's components was the clarification of 'part-whole relationship' as a dynamic interplay between object and person perceptions (Lewin, 1935). The part-whole object relationship was carried forward by Heider (1958), when he indicated that people make sense of their actions and the actions of others by constantly making internal or external attributions about the cause of another person's behaviour. That is, they interpret the cause of an event or behaviour. This is one of the most seminal contributions, which continues to underpin Attribution Theory (Hewstone, 1989).

Weiner (1985) built upon Heider's work in his theory of achievement and emotions, suggesting that there are three key dimensions to attribution theory: (1) locus of control, (2) controllability, and (3) stability/globality. Weiner and others (1979; 1980; 1982; 1985; 1986; 1988; 1990; 1995; 1997), proposed that people made judgements about the cause of a behaviour or an event as well as making judgements about controllability. Therefore, they changed 'locus of control' to 'locus of causality'. They continued to develop attribution theory and created a multi-dimensional model to highlight the role of causal attributions.

**A.1.9.2. Dimensions of attribution theory.** Weiner and colleagues (1979; 1980; 1982; 1985; 1986; 1988; 1990; 1995) suggested that there are three dimensions within attribution theory: (1) 'locus' of causality (internal or external to the person), (2) 'controllability' (e.g., do individuals have control over their behaviour), and (3) 'stability/globality' (e.g., are experiences stable across time or in all situations).

Attribution theory predicts that people make causal attributions about an individual's behaviour, which influences an emotional response, which in turn mediates a behavioural response. For example, individuals who have a mental illness, or display challenging behaviour, and who are perceived as being able to control their behaviour, can often provoke feelings of anger in others and feelings of guilt in themselves. This can then influence a behavioural response, e.g., avoidance. Nevertheless, even though perceptions of controllability may provoke anger, it can also promote optimism (Willner & Smith, 2008b) about the possibility of change and encourage helping behaviours. On the other hand, when individuals are perceived to have no control over their situation, it can result in feelings of pity in others and feelings of shame in themselves (Weiner, 1979; 1980; 1985; 1986; 1995). This in turn reduces optimism and may promote feelings of helplessness (Abramson et al, 1978) which hinders an individual's ability to engage in help-seeking behaviours.

In reviewing attribution theory, Corrigan (2000), suggested a linear causation in that attributions lead to a specific range of behavioural intentions (e.g., helping or coercive). This led to the development of his social-cognitive model (as previously discussed and outlined in figure 7). In addition, in 2003,

when exploring public attitudes towards those with a mental illness, Corrigan identified that peoples' perception of dangerousness in an individual with mental health difficulties influenced coercive behavioural intentions, which were considered to be mediated by a feared response (see figure 8). Corrigan's findings support previous research (e.g., Link et al., 1999) in which participants considered that those with a mental illness should be avoided, segregated and coerced into receiving treatment. Research has indicated that attributions of dangerousness or other attributions lead both the general public (e.g., Corrigan et al., 2003) and mental health professionals (e.g., Bowers, 2002) to avoid and segregate those with a mental illness. However, this model was developed to explore the general public's reactions to a psychiatric label. As such, previous research has used psychiatric labels as the signal for attributions (e.g., Corrigan et al., 2003).

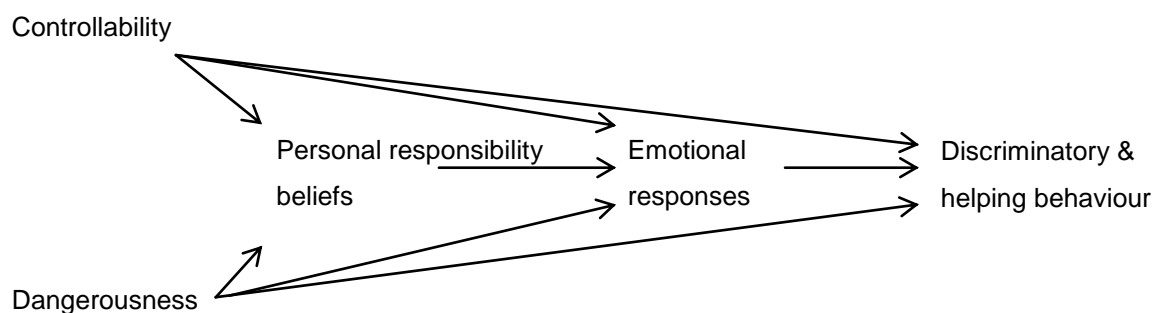


Figure 8. Corrigan's (2003) pathway model to understand discriminatory and helping behaviour towards those with mental illness

Attribution Theory remains an influential paradigm of social psychology and has been utilised by clinical psychologists who have conducted research, which has investigated a range of clinical presentations, for example: Eating disorders (Dalglish et al., 2001); depression (Rusch, Kanter & Brondino, 2009); intellectual difficulties (e.g., Wilner & Smith, 2008a; 2008b); mental illness (e.g., Jorm & Griffiths, 2008; Read, 2007); PTSD (Ginzburg, Solomon, Dekel & Neria, 2003) and the influences of substance misuse on mental illness (e.g., Corrigan et al., 2003). However, in a recent paper, Corrigan and Shapiro (2010) suggest that pathways that attributions of personal responsibility may evoke feelings pity or anger, which mediates helping behavioural intentions, conversely attributions of

dangerousness evoke a fear response, which mediates coercive behavioural intentions.

Many researchers (e.g., Corrigan et al., 2003, Willner & Smith 2008a) seek to understand stigmatising or helping behavioural intentions. However, a weakness of attribution theory is that they explore behavioural intentions and not behavioural outcomes (an actual behaviour) towards those who experience mental illness. Therefore, the present study will measure both intentions and output.

#### **A.1.10. Public Attitude Studies**

Studies that have used biogenetic conceptualisations to examine public attitudes have produced mixed results. For example, Read (2007) highlighted that biogenetic conceptualisations increase stigmatising attitudes towards those with a diagnosis of schizophrenia. An earlier review by Read et al. (2006) also concluded that when promoting schizophrenia as an illness like any other, the general public's stigmatising attitudes increase upon receiving biogenetic conceptualisations. Other authors (e.g., Corrigan & Watson, 2002; Phelan, Yang & Cruz-Rojas, 2006) have also cautioned that biogenetic conceptualisations have mixed effects on stigmatisation. However, Jorm and Griffiths (2008) found that biogenetic conceptualisation reduced social distance and previous research (e.g., Goldstein & Rosselli, 2003; Phelan, 2005) has supported their findings.

Three systematic literature reviews (Angermeyer, Holzinger, Carta & Schomerus, 2011; Jorm & Oh, 2009; Read et al., 2006), have also been conducted, which have explored the impact of biogenetic explanations on stigma. This again highlights the lack of consensus within the research community as to whether biogenetic conceptualisations increase social distance. Kvaale, Haslam and Gottidiener (2013) conducted a meta-analysis and systematic literature review as they highlighted that previous reviews had not encompassed all facets of stigma, and used this as a rationale for conducting a series of meta-analyses. They carried out four meta-analyses on 28 studies (Ns = 1207 to 3269) and found that biogenetic conceptualisations (a) increased perceptions of dangerousness, (b) reduced personal responsibility, and (c) had no impact on social distance.

Kvaale et al. (2013) suggested that reducing personal responsibility may create pessimistic attitudes, which could hinder people's ability to recover from psychological distress (Kvaale et al., 2013). However, it is important to note that a number of studies (e.g., Corrigan et al., 2003; Jorm & Griffiths' 2008) were excluded from the meta-analysis because they were not considered eligible. Reasons for exclusion included: studies contained multifaceted interventions, had no relevant measures, or failed a biogenetic conceptualisation measure.

Attribution theory has been applied in a variety of contexts to understand stigmatising attitudes towards those with a mental illness. For example, Martin et al. (2000) investigated the role of causal attributions in shaping attitudes towards those with a mental illness. They found that the general public were more likely to attribute the cause of schizophrenia to chemical imbalance, genetic factors and stressful life events than to bad character, the way they were raised or God's will (Martin et al., 2000). Moreover, Martin et al. (2000) found that internal locus of causality (e.g., bad character) was associated with an increase in social distance whereas external locus (e.g., stress life experiences) reduced social distance.

One of the most cited public attitude studies (437 citations<sup>40</sup>) was conducted by Corrigan et al. (2003), who used an experimental survey design to examine a range of (a) causal attributions (e.g., personal responsibility, controllability, dangerousness), (b) emotional responses (e.g., pity, anger and fear), and (c) behavioural intentions (e.g., helping/distance and coercive/segregation). The survey, which contained a hypothetical vignette as well as an attribution questionnaire, examined these causal structures using a sample of college students (N = 518). They found that the attribution questionnaire had good concurrent validity and internal validity, but potentially lacked external validity in that it would be difficult to generalise from this research, as the sample was based on college students. This lack of external validity has been a criticism of much of social psychology research, as it has commonly used homogeneous samples (Corrigan & Shapiro, 2010). The current study has aimed to improve external validity by using a heterogeneous sample.

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<sup>40</sup> Number of citations as of 14<sup>th</sup> July 2014



**A.1.10.1. Attitude studies examining the impact of familiarity.** Familiarity has been defined as interpersonal contact with members of a stigmatised group (Couture & Penn, 2003) and has been widely studied in relation to familiarity with and attitudes towards those with a mental illness. Although it should be noted that there are various definitions, as contact can involve direct, interpersonal contact such as having a neighbour, relative, or friend who hears voices; working in a setting providing services for voice-hearers. However, there are other types of indirect contact, such as watching a television programme or reading an article about voice-hearing. In the current study indirect contact is not included in the definition of familiarity.

Numerous studies have indicated that familiarity with mental illnesses reduces discriminatory behaviours (Corrigan, Edwards, Green, Diwan & Penn, 2001a; Corrigan, Green, Lundin, Kubiak & Penn, 2001b; Corrigan et al., 2003; Couture & Penn, 2003; Penn, Guynan, Daily & Spaulding, 1994; Walker & Read, 2002). Furthermore, familiarity is considered to reduce a fear response (Corrigan et al., 2003; Link & Cullen, 1986). Corrigan et al. (2001b) completed a path analysis and found a small-to-medium negative effect of familiarity on perceptions of dangerousness. However, Corrigan et al. (2001b) found a large-sized effect between perceptions of dangerousness and fear, which leads to an increase in social distance. Nonetheless, not all contact reduces stigmatising attitudes. For example, Schulze (2007) found that mental health professionals have contact and provide support to those with a mental illness, yet can be considered to display stigmatising attitudes towards those with a mental illness. Corrigan and Shapiro (2010 p.6) suggest that mental health professionals work with people who may present with psychosis or agitation, and these interactions do not encourage “*positive contact effects*”. Therefore, mental health professionals are not able to “*disconfirm negative stereotypes*” (Corrigan & Shapiro, 2010 p. 6). When conducting the present study, we considered the role of familiarity (i.e., personal, family/friend and professional) in influencing attributions, towards voice-hearers.

#### **A.1.11. Professional Perceptions**

Professional perceptions of mental illness appear to be divided between those using medical conceptualisations and those using psycho-social conceptualisations. It has been reported that professionals attributing mental

illness to medical conceptualisations and who are also influenced by diagnostic categories (Morey & Ochoa, 1989) perceive those with a mental illness as more dangerous (Bennett, Thirlaway & Murray, 2008) than those professionals using a psycho-social conceptualisation. They were also more pessimistic about treatment outcomes (e.g., Struening et al., 2001). Conversely, professionals endorsing psycho-social conceptualisations appeared more willing to be collaborative when supporting service-users in managing their mental health experiences (Kent & Read, 1998), and were less blaming of service-users' behaviour (Miresco & Kirmayer, 2006).

Medical students are expected to be more knowledgeable than lay people, but do not necessarily have the experience of mental health professionals. However, a lot of literature has encompassed medical and psychology students. It may be that student attitudes to schizophrenia mirror public attitudes. For example, Magliano et al. (2011) examined beliefs from 194 medical students who were asked to read a vignette about a person who exhibited symptoms of schizophrenia (the vignette was constructed to ensure that it met the criteria for schizophrenia in the International Classification of diseases (ICD)-10). These students were asked to identify the diagnosis; locus of causality (e.g., internal [biological, genetic] or external [environmental factors]); dangerousness; and social distance. Students who identified the diagnosis of schizophrenia rated locus of causality to be attributable to genetic factors and were less likely to attribute the cause to environmental factors. Furthermore, these students were more likely to be pessimistic about whether the person described in the vignette could be helped, and perceived them as unpredictable. Magliano also reported higher levels of avoidance towards this client group. A minority of students (24%) endorsed 'causal explanations' of mental illness to family environment. These students were more optimistic that the person described in the vignette could be helped to control symptoms.

Lincoln et al. (2008) explored the differences between medical and psychology students. Students are not categorised as professionals but could be considered to be more knowledgeable than the layperson about voice-hearing and mental illness. There were three phases to the study: (1) students were given an initial assessment of implicit and explicit attitudes to schizophrenia; (2) they were then divided into three groups, biogenetic, psychosocial and control groups; and

(3) they were then reassessed on their implicit and explicit attitudes to schizophrenia. They found that there was no significant difference in mean stereotype score or stereotype factors. For example, medical students reported less social distance attitudes than psychology students. Furthermore, social distance was associated with perceptions of dangerousness and poor prognosis.

Medical and psychology students also differed in correlations between causal explanations and stereotypes. Despite not achieving statistically significant results, Lincoln et al. (2008) found that biogenetic intervention reduced attributions of personal responsibility and social distance but increased assumptions of poor prognosis. Conversely, the psychosocial intervention led to a reduction in attributions of dangerousness and social distance and more optimism related to prognosis. It appears that lowering attributions of personal responsibility and dangerousness can reduce desire for social distance. However, these conceptualisations appeared to influence prognosis.

#### **A.1.12. Service-User Perceptions**

Rusch, Corrigan, Todd and Bodenshausen (2011) highlighted that those with a mental health problem are less likely to display negative attitudes compared with the general public. However, people who exhibit mental health difficulties are often exposed to stigmatising attitudes and therefore may come to internalise these negative attitudes about mental illness. This may lead to self-stigma.

Self-stigma is considered to have three elements: *“awareness of the stereotype, agreement with it, and applying it to one’s self”* (Corrigan, Larson & Ruesch, 2009, p. 75). Self-stigma results in diminished self-esteem and self-efficacy, which stops those who feel stigmatised from engaging in the kind of experiences that link with achieving life goals. Negative attitudes towards minority groups (including those with mental illness) are often displayed in indirect and subtle ways, yet can still be harmful (Bodenshausen & Richeson, 2010). Self-stigma is thought to be associated with poor quality of life (Corrigan et al., 2009), which is considered to undermine vocational functioning (Lysaker, Roe & Yanos, 2007). Internalisation of these stereotypes can impact negatively on self-esteem, and therefore impact on the ability and/or willingness to seek help (Corrigan, Watson & Barr, 2006). Furthermore, they may also avoid accessing support and

services, due to a “*why try effect*” which can diminish the notion that one can be helped by mental health services (Corrigan et al., 2009, p. 75).

#### **A.1.13. Implications for Anti-Stigma Campaigns**

Despite findings that anti-stigma campaigns have not produced changes in attitudes, it has not dampened professionals’ enthusiasm to ‘educate’ the public (Smith, 2013). For example, the World Psychiatric Association launched a campaign to tackle stigma associated with schizophrenia. Public health campaigns were then introduced in many countries: Canada (‘Opening Minds’); England (‘Time to Change’); New Zealand (‘Like Minds, Like Mine’, 1997), Scotland (‘see me’); America (‘What a Difference a Friend Makes’). These anti-stigma campaigns are costly and in order to improve the impact of them, calls have been made to move away from medical conceptualisations of mental health difficulties (e.g., Read, 2007). Lincoln et al. (2008) proposed that anti-stigma campaigns should take a multi-dimensional and balanced approach, that provides additional information about the facts associated with mental illness, including voice-hearing.

#### **A.1.14. Clinical Implications**

It has been suggested that clinical psychology has been on the side-lines regarding understanding and developing anti-stigma programs, despite research in this area having flourished. Corrigan and Shapiro (2010) reviewed the literature and found that journal articles on stigma have increased almost fourfold from 178 to 641 over the last ten years, with around a third of these articles exploring the stigma of mental illness. However, only a small percentage (1.4%) of these was found in Clinical Psychology related journals. Assumptions should not be made that clinical psychology is completely absent from anti-stigma programme research. As the topic of stigma appears to also be associated with community psychology, both theoretically and methodologically as 37.8% (27 members) of Division of Community Psychology reported their subfield as clinical psychology (APA, 2008, cited in Corrigan & Shapiro, 2010). Corrigan and Shapiro (2010) highlighted that the absence of clinical psychology’s participation in anti-stigma research is unfortunate. They go on to say that

*“Clinical psychologists are often leaders in understanding the symptoms and disabilities of mental illnesses. Along with these factors, stigma is now recognized as a significant predictor of course and impact of mental illnesses”.* (Corrigan & Shapiro, 2010 p. 2)

Further to the clinical implications outlined within the journal article, it should be noted that many authors have often positioned and tested medical and psychosocial conceptualisations as rival approaches (e.g., Lincoln et al., 2008; Walker & Read, 2002). The current study will continue this work by comparing across distinct conceptualisations, but acknowledges that (in practice guidelines) the general consensus is that they should be integrated, using a bio-psycho-social conceptualisation (BPS, 2000). Nonetheless, in practice, it is likely that a given message will emphasise one aspect of the integrated model over another and accentuate either the biological/genetic or psychosocial (Heriot-Maitland, 2011). It is important to understand how different emphases could encourage people towards making different appraisals (and consequent responses). Within the current study, the FI model would be the closest to representing a bio-psycho-social model (e.g., stress-vulnerability model).

Additionally, mental health professionals (including clinical psychologists) should acknowledge recommendations outlined in the International Clinical Practice Guidelines for Early Psychosis (Addington et al., 2005) that countywide education programmes should be delivered to the public in a range of settings (e.g., schools, hospitals) to promote a better understanding of voice-hearing. Furthermore, these guidelines emphasise that mental health professionals should develop initiatives to fight stigma and reduce discrimination.

#### **A.1.15. Theoretical Implications**

It is important that applied psychological theories are revised and tested through a process of falsification. This ensures that they continue to be relevant and fit for purpose, as they influence clinical practice. For example, attribution theory underpins many psychological therapies (e.g., CBT), that are used to intervene in a range of clinical presentations, including voice-hearing. Therefore, the present study tested attribution theory, using mediation analysis, to identify whether the causal mechanisms previously identified, were still relevant.

### **A.1.16. Extended Aims**

Only two out of three aims were presented in the journal article. The third aim of this study was to explore the extent to which various socio-demographic characteristics influence attributions.

## **Extended Methods Chapter**

### **B.1. Epistemology**

Research that has explored hearing voices has historically employed positivist epistemology and favoured quantitative methods. It has focused on standardised measures of symptomatology and social functioning and has been criticised for not capturing subjective human experiences (Whitley & Crawford, 2005). This study is using a standardised measure, an attribution questionnaire. However, the first author's epistemological position falls within a post-positivist tradition, which emerged from criticisms levelled at the positivist tradition because it failed to take into account subjective experiences (e.g., the researchers' subjective biases, human subjective experiences) as these were not deemed valid (Guba & Lincoln, 1994; Lincoln, Lynham & Guba, 2011). Furthermore, many positivists objectify constructs without acknowledging their subjective nature, e.g., psychosis, or an attribution. However, there is a need to objectify these constructs to allow them to be measured. For example, the notion of an attribution or an emotional descriptor is a way for people to make sense of the world around them. Thus, labels are created to account for particular phenomena, which are subjective in nature. They are not a real thing that exists independently, but are a useful way of talking about something that appears to happen. For example, attributions are considered to be a psychological concept. In general, psychological characteristics, which by nature are largely unobservable (directly), are concepts, which may have different meanings and interpretations depending on the context in which experiences occur. Robson (2002) highlighted that post-positivism can be viewed as sympathetic to both the traditional (e.g., realism and relativism) ideologies of science as well as the post-modern views within a social constructivist perspective.

## **B.2. Design**

A web-based survey (Survey Gizmo) was employed during March and April 2013, utilising a randomised group design. The independent variable was a vignette condition, which is represented by five conditions: four different conceptualisations and a control group (no conceptualisation offered). The dependent variables were (1) attributions, (2) emotions, (3) behavioural intention and (4) a behavioural outcome. The design was two-fold: (1) to compare the impact of differential conceptualisations on attributions, emotions, behavioural intentions and behavioural outcomes towards voice-hearers and to explore whether socio-demographics influenced these responses; (2) to use mediation analysis to examine the relationships predicted in attribution theory.

## **B.3. Recruitment**

The hyperlink to the survey was placed (posted) on social networking sites (e.g., personal Facebook account; friends and family Facebook accounts; and on other Facebook sites). Participants were encouraged to share Facebook posts to recommend the study to their friends and family, thus utilising a snowballing technique. Research websites were also used. However, not all research websites hosted the survey. The first author contacted ten research sites and asked administrators to place this study on research websites. Only four websites hosted the survey: (1) [Research@In-Mind.org](http://Research@In-Mind.org) advertised it on their website and on Facebook; (2) [www.valecvs.org.uk](http://www.valecvs.org.uk) placed it on their website, and advertised it through Facebook and Twitter (3) <http://psych.hanover.edu/research/exponnet.html> placed it on their website, and advertised it through Facebook and Twitter; and (4) <http://www.reddit.com> placed it on their website. The first author emailed correspondence to everyone in her contacts list. Emails included a brief explanation of the research and a suggestion that potential participants took time to consider whether they wished to take part. Email respondents were asked to forward the hyperlink to everyone in their address book. The first author also reported progress on a daily basis on all Facebook sites to encourage recruitment.

## **B.4. Participants**

The study was open to all members of the general public who were aged 18 years and over. They had to be able to understand the English language in a written format as funding for translating the survey was unavailable. 1,370 people

accessed the survey from social networking sites, research websites and from email correspondence. 1,004 participants (73%) completed the survey, 366 people (27%) partially completed the survey. Partially completed data was excluded from the analysis.

**B.4.1. Inclusion criteria.** The study was open to all members of the general public who were aged 18 years and over. All participants were required to understand the English language in a written format, as alternative formats were unavailable due to a limited budget for transcription services.

**B.4.2. Exclusion criteria.** Any person who did not answer yes to questions within the consent form, or did not agree to take part in the study were excluded from the study, but were thanked for their interest in taking part.

## **B.5. Vignettes**

Vignettes are typically considered to have low external validity in that they do not reflect the magnitude of life events that voice-hearers may have endured (Kinicki, Hom, Trost & Wade, 1995). However, the authors used their expertise in deciding common characteristics and behaviours of voice-hearers' experiences within a clinical setting, which was considered to add ecological validity. Furthermore, an independent voice-hearer gave feedback during the construction of the vignettes. Vignettes may be useful when researching public attributions, perceptions, emotions and behavioural intentions as they provide a standardised description of the voice-hearer, which is considered to increase internal validity of the vignette design (Hughes & Huby, 2002). Asking participants to rate their responses to a character in a vignette as opposed to a generalised statement, enhances ecological validity and is considered to be more advantageous in collecting participants' attributions, emotions and intended behaviours (Corrigan & Sharipo, 2010).

Vignettes are useful as they allow researchers to manipulate the types of information given to participants and enable them to measure whether the information offered influenced attributions, emotions, behavioural intentions and actions (Hughes & Huby, 2002). Research has investigated the impact of gender differences within vignette studies but there appeared to be no gender differences



(e.g., Jorm & Griffiths, 2008). Given that no gender differences were found in Jorm and Griffiths' research, this study opted to have a male character in all five vignettes.

As discussed in the journal article, all the vignettes had the same descriptive overview of John:

John is 24 and lives at home with his parents. He hears voices that other people cannot hear. Sometimes they sound like whispers and at other times can be very loud. Sometimes the voices seem supportive, for example by telling John that he can achieve something he is nervous about. At other times, they call him names or make fun of him. They also tell him to do things that he does not want to, for example stay in his house rather than go anywhere. This at times causes him to feel distress.

As outlined in the journal article, five vignettes were created to explore the influence of the differential explanations. One vignette did not provide a conceptualisation.

**B.5.1. Vignette Readability.** The vignettes that were developed were subject to readability analysis (Klare, 1974). These generated two scores: (1) Easy reading scores, where higher scores represent improved readability and (2) Flesch-Kincaid reading grade score, where lower scores represent improved readability (see table 4). This analysis is designed for an American population, which is reflected in the terminology. The analysis showed that conditions were suitable for children in grades 5 to 10 (age range 11-16 years old).

Table 4:  
Vignette Readability Scores

Conceptualisations	Easy Reading Score (Reading Grade)
Biological	59 (9)
CBT	69 (8)
Family Intervention	60 (9)
Spiritual	54.2 (10)
Control Group	80.5 (5)

## **B.5.2. Vignette Conceptualisations**

Each vignette had the same description of John, however, they were offered an explanation of voice-hearing. These are outlined below.

**B.5.2.1. Biogenetic conceptualisation.** Voice-hearing may be a symptom of a biological disorder involving chemical or structural changes in the brain. Voice-hearers may produce too much of the brain chemicals that are linked to how emotions and perceptions are processed, and this may underlie the experience of 'hearing' voices. Furthermore, it has been shown that some people who hear voices have slightly different brain structures because their brains may not have developed in the usual way. Such brain differences tend to run in families and probably have a genetic basis. For example, it is likely that some of John's relatives will also experience voice-hearing. One way to manage voice-hearing is with antipsychotic medication – which aims to rebalance the level of chemicals in an individual's brain and thereby eliminate or reduce the voices.

**B.5.2.2. CBT conceptualisation.** People sometimes 'hear' their own thoughts as though they are external to them. This experience is quite common, as the way we listen to our own thoughts is similar to how we hear others talking. The important thing is how we make sense of these experiences: our beliefs about the identity, power, and intent of the 'voices'. For example, if John believes his voices are powerful and dangerous, he is more likely to be distressed by them and to react in unhelpful ways. Beliefs that people have about their voices may reflect deeper beliefs about themselves and others. If someone is troubled by their voices, one way to manage voice-hearing is with Cognitive Behavioural Therapy – which aims to change how people think about and respond to their voices.

**B.5.2.3. Family intervention conceptualisation.** Voice-hearing experiences can be triggered by too much stress. Some people may be more vulnerable to the effects of stress than others, so the amount of stress that is 'too much' will vary from person to person. There are a number of reasons why a person may be particularly vulnerable to stress, including: genetic predisposition, personality factors, or previous traumatic experiences. Stress could come from many sources. In John's case, it may be that his home environment is stressful; for example, he may get drawn into emotional arguments between his parents. In cases where a voice-hearer is in close contact with their family, one way to

manage voice-hearing experiences is with Family Therapy – which aims to reduce the level of stressful interactions and increase support within the family.

**B.5.2.4. Spiritual/religious conceptualisation.** People who hear voices may have a special spiritual sensitivity, which enables them to communicate in ways that are outside of conventional understanding. Some religious and spiritual practitioners would interpret voice-hearing as a divine gift or spiritual possession. For example, John's experiences could mean that someone or something is trying to communicate through him. It has been suggested that most people have some form of spiritual sensitivity (or 'psychic ability') available to them and that they can learn how to develop and control this over time. One way to manage voice-hearing experiences is through support from a spiritual or religious leader. Such individuals aim to provide guidance and spiritual advice – this may include interpretation of the meaning of the voices and their relationship to spiritual and/or religious matters.

## **B.6. Familiarity**

When reviewing the literature there is evidence that familiarity with mental health problems reduces negative attributions, especially the perception of dangerousness (e.g., Angermeyer et al., 2004). This study adapted Corrigan's measure in line those described by Angermeyer et al. (2004). For example, participants were asked: (a) whether they had experienced voice-hearing; (b) had any of their family members experienced voice-hearing; (c) whether they had worked with voice-hearers in a professional or volunteer setting; and (d) whether they knew a friend, co-worker, or neighbour who had experienced voice hearing. Categories were collapsed due to responses recorded and four categories were created: (1) personal experiences of voice-hearing, (2) family/friend experiences, (3) work experiences, (4) no direct experiences with voice-hearing.

## **B.7. Demographic Information**

Three socio-demographic variables (gender, level of education and age) have produced mixed results as to whether they influence attributions towards those with mental health problems. Previous authors (e.g., Jorm & Griffiths, 2008) suggested that different levels of education may affect stigmatising attitudes. For example, Jorm and Griffiths (2008) highlighted that attributions about levels of dangerousness were rated lower in "better educated people". However, level of

education was not defined in their study. This study took an exploratory approach by examining any links between levels of education (e.g., no qualifications through to PhD/doctorate) and attributions (e.g., personal responsibility, dangerousness). However, it was important to identify whether interest in psychology was a confounding variable, as participants may have used this knowledge to challenge or support the conceptualisation offered in the vignette. In addition, ethnicity and religious or spiritual beliefs may also influence attributions towards voice-hearers. Therefore, the present study used these six demographic variables (gender; age; level of education; interest in psychology; ethnicity and religious/spiritual beliefs) to assess whether these influenced participants' attributions towards voices-hearers.

## **B.8. Data Collection**

Two dominant methods: Structured questionnaires and open-ended interviews, are at either end of the data collection continuum. These are used frequently to capture public beliefs and attitudes towards mental illness and can range from open-ended to extremely structured. Highly-structured questionnaires are designed to gather large-scale numerical data, but may hinder the discovery of information that could contribute to the area of investigation. Whereas, open-ended interviews are used to produce in-depth subjective accounts of the topic under investigation (Seidman, 2012). When designing the present study, consideration was given to the merits of these two approaches.<sup>41</sup>

The rationale for using a questionnaire method was influenced by Jorm and Griffiths (2008). They suggested that a limitation of interviewing participants may be that answers are based on perceived social desirability and there is a possibility of reactivity to the interviewer. Cronbach (1946) proposed a definition of social desirability, that people would deliberately alter responses to appear to be in line with social norms or to look socially favourable. Building in privacy (i.e., using anonymised questionnaires) may mitigate this limitation and eliminate interviewer bias (Corrigan & Shapiro, 2010). As a result of these considerations, this study sought to use an online attribution questionnaire. It was considered that participant responses were less likely to be influenced by investigator bias (e.g., Sibbald, Addington-Hall, Brenneman & Obe, 1996; Sibbald, Addington-Hall,

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<sup>41</sup> Methodology issues are discussed further in the critical reflection section ??

Brenneman & Freeling, 1994) and that participants would be able to respond more honestly without fear of being judged. In addition, this design would enable a greater number of participant responses to be collected during the limited timeframe of the study.

### **B.9. Adapted Attribution Questionnaire**

As stated in the journal, this study used an adapted version of Corrigan et al.'s (2003) attribution questionnaire to explore the effects of attributions and behavioural intentions. Corrigan et al. (2003) developed this questionnaire by expanding Weiner's (1988) measures with an additional 11 questions from Reizenstein (1986): Controllability, sympathy, anger, and helping behaviour. Corrigan et al. (2003) divided these into six different constructs, which were considered to have internal reliability (e.g., Corrigan et al., 2004) as measured by Cronbach's alpha scores: (1) personal responsibility ( $\alpha = .70$ ), (2) anger ( $\alpha = .89$ ) = (3) fear ( $\alpha = .96$ ), (4) pity ( $\alpha = .74$ ), (5) helping/avoidant behaviours ( $\alpha = .88$ ), and (6) coercion/segregation ( $\alpha = .89$ ).

This study made further adaptations by adding extra helping/avoidant questions in addition to Corrigan's four items. Link, Cullen, Frank, and Wozniak (1987) developed a 'social distance scale', which had three additional questions. These three questions were added to the current study as all seven items were considered to have higher internal reliability (Link et al., 1987) as measured by Cronbach's alpha scores ( $\alpha = .92$ ).

Corrigan's attribution questionnaire has been used effectively to explore and identify attributions that a university student population holds about people with mental illness in a vignette-design study. Corrigan scored all responses to the attribution questionnaire on a semantic differential scale of (one = not at all to nine = absolutely). This study altered the scoring so that zero represented not at all to eight = absolutely. Furthermore, Corrigan used the mean scores for each construct (i.e., adding together responses and dividing the answer by the number of items within the construct). Many constructs had cognitive and emotional components. However, within the present study, these were separated and analysed appropriately (see table 5).

When assessing the reliability of the attribution questionnaire, Cronbach's alphas were used. Field (2013) suggests that an alpha score of .7 or above

indicates a reliable scale. As can be noted in table 5 below, when re-analysing the original attribution questionnaire it would have meant that some alpha scale scores dropped below this .7 threshold and therefore constructs would no longer be internally consistent. Preliminary analysis within the present study revealed that some of the construct alpha scores differed from Corrigan's. Therefore, for the purpose of the current study, constructs were altered to enhance the internal validity of each construct.<sup>42</sup>

The authors considered the language used within Corrigan's attribution questionnaire to be confusing and at times ambiguous (e.g., whether the questions related to the person described in the vignette or about all people with mental health problems in general). Therefore, questions were re-worded to overcome this ambiguity and to enhance ease of reading. In addition, Corrigan's attribution questionnaire explored familiarity, but not to the same depth as other studies (e.g., Angermeyer et al., 2004; Jorm and Griffiths, 2008). Therefore, this element of the attribution questionnaire was also adapted to incorporate a wider range of experiences. As noted in the journal article, additional questions, were added in order to explore attributions that participants make about 'locus of causality', stability and globality. A copy of the adapted attribution questionnaire can be found at appendix D.

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<sup>42</sup> See appendix I for a detailed comparison of changes and of the differences between Corrigan et al's., 2003 attribution questionnaire and the current study

Table 5:

Internal Validity: Original Alpha Scores, Validated Alpha Scores, and the Current Study's Alpha Scores

Construct	Original number of items	Preliminary analysis of Corrigan's original constructs	Revised Constructs Number of Items	Revised Constructs Alpha Scores
Personal Responsibility	3	.65	2	.73
Controllability	N/A	N/A	1	No score - as a single item
Dangerousness	N/A	N/A	1	No score - as a single item
Stability	N/A	N/A	1	No score - as a single item
Globality	N/A	N/A	1	No score - as a single item
Pity	3	.67	1	No score - as a single item
Sympathy/Concern	N/A	N/A	2	.75
Fear	4	.92	3	.96
Anger	3	.87	3	.87
Helping Behavioural Intentions	4	.87	7	.93
Coercive Behavioural Intention	4	.89	4	.89
Behavioural Outcome measure	N/A	N/A	1	No Score – as a single item

Notes: On the original attribution questionnaire:

- (1) Controllability is N/A as it was an item within the construct Personal Responsibility, it was separated out due to poor internal consistency
- (2) Dangerousness is N/A as it was an item within the construct Fear. In the current study Dangerousness is considered an attribution.
- (3) Pity was the overall construct for three variables: Pity, sympathy and concern. In the current study pity was separated from sympathy and concern to improve internal consistency
- (4) Stability, globality and a behavioural outcome measure were not previously assessed
- (5) A full list of each item within each construct can be found at appendix J (table 9)

## **B.10. Ethical Considerations**

Within this study, there were some potential ethical issues, which needed consideration; one of which was the issue of consent. This study was internet-based and used a self-selecting sample. The first author had no control over who took part. The first author made all reasonable attempts to provide participants with all the information they needed to give informed consent. Additionally, participants were advised to consider participation for a minimum of 24 hours prior to taking part.

The second ethical issue was related to deception. The British Psychological Society (BPS) Code of Ethics and Conduct (2009), states that researchers should only withhold information from participants in exceptional circumstances when it is necessary to preserve the integrity of research. Participants could not be fully informed at the outset about the full aims of the research, as this may have influenced their responses and encouraged them to give answers that they may have thought the researcher was hoping to uncover. Because of this, only an overview of the study was given on the information sheet. However, in accordance with BPS guidelines (BPS, 2009), participants have to be informed of the nature of any deception at the earliest opportunity. Therefore, participants were fully debriefed at the end of the online survey. As this was given at the end of the survey participants could not go back and alter responses. They were thanked for their involvement and were given the opportunity to withdraw from this study by emailing the first author.

## **B.11. Bonferroni Corrections**

Various articles offer arguments for and against using Bonferroni Corrections (e.g., Cabin & Mitchell, 2000; Moran, 2003). Whilst reflecting on these arguments, it was important for the current study to have confidence in reporting statistically significant findings, whilst controlling for a type-I, (i.e., reporting a difference between groups when there is no difference) and/or type-II errors (i.e., reporting no difference between groups when there is a difference). This study was principally designed and powered (see power calculation in the journal article) for Aim 1, as there was not a clear prediction, for example, some of the conceptualisations have not been compared before, or considered in relation to



some of the DVs. Taking into account the multiple DVs, alpha corrections were administered (controlling Type I errors). Without applying these corrections, it might seem that the authors were looking for differences on many variables without clear predictions or rationale, particularly as the attribution model would prioritise effects on cognitive attributions and consider other effects as secondary analyses.

The third aim reported in this extended paper was considered to be an exploratory analysis. It is important to note that multiple testing may influence interpretations. There is an argument for prioritising Type II errors (i.e., ensuring that the effects that might be of interest for more precise examination, are not missed). Therefore, exploratory analyses should be less conservative than using more stringent p-values. Furthermore, even without adjustment for multiple testing, none of the correlations involving demographic variables approached significance (i.e., the unadjusted .01 significance level). Adjustment for multiple testing (i.e., Bonferroni correction) would have reduced the chance of finding spurious relationships (i.e., Type I error) but at the potential cost of reducing power to detect significant relationships (i.e., Type II error). In the event, even with liberal (unadjusted) testing criteria, demographic variables did not appear to be related to the variables of interest.

## **Results Chapter**

This extended results chapter expands on the results outlined in the journal article, as well as presenting the results for aim 3. Preliminary analysis, data considerations and testing procedures were all conducted with reference to the following texts: Field (2013) and Pallant (2010).

### **C.1.1. Preliminary Analysis**

The dataset used for the preliminary analysis was originally produced on an Excel spread sheet. This spread sheet was converted into an SPSS dataset.

**C.1.1.1. Missing data.** Missing data fields were checked and it appeared that some participants did not complete every question, but had completed the survey and consent was not withdrawn. Therefore, all data collected was

analysed. There are two options when dealing with missing data: (1) 'exclude cases pairwise', which would just exclude the missing variable for that analysis; (2) 'exclude cases listwise', which would exclude the missing value for any variable for that participant. During the analysis phase the 'exclude cases pairwise' option was selected, to ensure that only missing cases were excluded and the remainder of participants' responses were included in specific analyses.

**C.1.1.2. Analysis of variance (ANOVA).** An ANOVA is best described as a linear model (Field, 2013), which allows researchers to use the group means rather than the overall mean to predict scores. Furthermore, ANOVAs produce an F-ratio, which tells us whether the group means are different. ANOVAs are considered to be robust tests (Field, 2013). However, it is important to ensure that the assumptions of ANOVA are not violated, otherwise F-ratios require adjustment. It is also important to note that F-ratios control the Type 1 error well, under conditions of non-normality (e.g., skew or kurtosis). When the sample is equally spread, an ANOVA remains a robust measure. Therefore, for the primary analysis, an ANOVA was used to explore the mean differences between groups on all dependant variables that did not violate the assumptions of normality.

**C.1.1.3. Normality.** In research that explores public attitude studies, scores on the dependant variable are not always normally distributed and can be either skew or kurtosis (Pallant, 2010). Most tests (e.g., ANOVAs) are robust to this violation, especially with large sample sizes (e.g., 100). Within the present study, normality was assessed in three ways, assessing: (1) test of normality, which produced statistically significant results for all variables, which was unsurprising given the large sample size (Field, 2013); (2) histograms were assessed visually for a bell shaped curve (for examples, see appendix K); and (3) skew and kurtosis absolute values scores were assessed. Scores greater than +/- 3.0 indicates a departure from normality (Kim, 2013), as highlighted in table 10 (appendix L). Four variables fell outside the parameters for normality: (1) 'personal responsibility', (2) 'God's will', (3) 'coercive behavioural intentions', and (4) 'ethnicity'. The first three variables were analysed using Kruskal-Wallis tests as this is the non-parametric equivalent of an ANOVA. There was no difference between the Kruskal-Wallis tests and the ANOVA for the variables 'personal responsibility' or coercive behavioural intentions. Therefore, ANOVA scores and descriptives have been presented in the journal article. Kruskal-Wallis scores

were reported for the variable 'God's will' as there was a discrepancy in the results between the parametric and non-parametric tests.

Correlational analysis is also considered to tolerate violations especially with a large sample size. For the third aim, it was considered more appropriate to err on the side of caution and use a non-parametric test. Therefore, Spearman's product-moment correlation coefficient was utilised.

**C.1.1.4. Robust Measures.** Given that a number of variables fell outside the parameters for normality, a robust measure was used when running mediation analysis for aim 2. Mediation analysis is considered to be a more complex analysis than an ANOVA (Field, 2013). Bootstrapping (Efron & Tibshirani, 1993) is a robust measure used when data is not normally distributed. It estimates the "*properties of the sampling distribution from the sample data*" (Field, 2013, pp. 199). This means that each sample extracted, is treated as a population from these smaller bootstrapped samples. This process can be repeated up to 2000 times with a small data set and 1000 times with a larger data set. For a full review of bootstrapping see Field, Miles and Field, 2012.

**C.1.1.5. Homogeneity.** Parametric tests assume that the groups have equal variance (Pallant, 2010). Most parametric tests are robust to any violations providing that group size is similar. Within this study, we tested homogeneity of variance to ensure that all groups were equally matched in terms of socio-demographic categories (see table 6). Assumptions were tested using Levene's test. Three socio-demographic variables violated this assumption: (1) 'personal experience' of voice-hearing, (2) 'close-working' experience of voice-hearing, and (3) 'gender'. When exploring the homogeneity of dependant variables, four variables violated this assumption: (1) 'personal responsibility', (2) 'own character', (3) 'God's will', and (4) 'behaviour outcome'. Where applicable, the *F*-test and *p*-values were adjusted, using Brown-Forsythe (Brown & Forsythe, 1974 as cited in Field, 2013) and results were reported within the journal article.

**C.1.1.6. Randomisation.** To ensure that the randomisation process was effective, a one-way between-groups ANOVA was conducted. Mean scores for all demographic variables across the five conditions were analysed. There were no significant differences between groups and (a) 'age',  $F(4, 999) = .980, p = .417$ ; (b) 'educational level',  $F(4, 999) = .198, p = .939$ ; (c) 'religion',  $F(4, 998) = .269, p = .898$ ; (d) 'interest in psychology',  $F(4, 999) = .500, p = .736$ ; (e) 'ethnicity',  $F(4, 999) = .446, p = .775$ ; (f) 'family/friend' familiarity,  $F(4, 999) = .205, p = .936$ ; (g) 'personal' familiarity,  $F(4, 996) = .838, p = .508$ ; (h) 'professional' familiarity,  $F(4, 982) = 1.408, p = .229$ ; and (i) 'gender',  $F(4, 989) = .803, p = .524$ . These non-significant results highlighted that the randomisation process had been successful and that participants had been randomly allocated across the five groups (see Table 6 for more descriptive statistics).

Table 6:

## Socio-Demographic Characteristics across the five conditions

Condition N=1004	Age Mean n = 852	Gender Males/Female) n=1002		Familiarity with voice-hearing <i>number</i> * <sup>1</sup> n = 1004			Educational level* <sup>2</sup> n =1004	Interest in psychology* <sup>3</sup> n = 1004	Spiritual / Religious * <sup>4</sup> n =1003
		Male	Female	Personal	Family /Friend	Work			
Biological	41.63	.29	.71	.08	.24	.34	3.19	1.51	.98
Cognitive	40.28	.31	.69	.12	.26	.29	3.11	1.59	1.03
Family Intervention	42.87	.26	.74	.10	.24	.26	3.16	1.57	.94
Spiritual / Religious	41.21	.24	.76	.08	.26	.31	3.05	1.54	.96
Control Group	41.50	.29	.71	.07	.27	.25	3.13	1.39	.93
Total mean	41.50	.28	.72	.09	.25	.29	3.13	1.52	.97

\*<sup>1</sup> Familiarity was categorised from 0 = No experience; 1 = Experienced

\*<sup>2</sup> Levels of Education ranged from 0 = No formal education to 6 = Doctorate level education

\*<sup>3</sup> Interest in Psychology ranged from 0 = No interest to 5 = Post Graduate level

\*<sup>4</sup> Spiritual and Religious beliefs were categorised 0 = None; 1 = Religious; 2 = Spiritual; 3 = Both

The journal article provided a comprehensive overview of the results for aim 1 because this was the primary aim. Sample characteristics, extended results for aim 2 and initial findings for aim 3 will be presented below.

### **C.1.2. Extended Sample Characteristics**

**C.1.2.1 Personal Experience of Voice-Hearing.** Ninety-one voice-hearers participated in this research, despite voice-hearer communities not being targeted to take part. The prevalence rate of participants who have or have had personal experience of voice-hearing, is in line with prevalence rates reported in previous research. Johns et al. (2002) reported that about 10% of the general public experience voice-hearing.

**C.1.2.2. Educational Attainment.** Educational attainment was coded as: no formal qualifications (4%), GSCE level (20%), A level (8.5%), higher education below undergraduate level (20%), undergraduate level (27%), Masters (13.5%), and doctorate level (7%).

**C.1.2.3. Previous experience of psychology.** Experience of psychology was coded as: none (29%), casual (37%), course attendance (10%), GSCE/A-levels (9%), undergraduate (6%), and post-graduate (9%).

**C.1.2.4. Religion/Spiritual.** The majority of participants (45%) reported that they were not religious or spiritual. A quarter of participants (25%) surveyed, reported that they were spiritual. 18% of participants reported that they were religious and 13% reported that they considered themselves to be both spiritual and religious.

### **C.1.3. Extended Aim 2 Results**

As noted in the journal article, mediation analysis was used to explore the causal mechanisms believed to underpin attribution theory. Traditionally, researchers would have done mediation analysis in SPSS manually. However, this method is considered to be limited and time consuming (Field, 2013). Preacher and Hayes (2008) developed a strategy for assessing and comparing indirect effects in multiple mediators. Hayes, developed a PROCESS tool, which can be downloaded as an add-on to SPSS (found at <http://www.afhayes.com/spss-sas-and-mplus-macros-and-code.html>). Field (2013) suggested that mediation is thought to occur if the direct relationship

between the predictor and outcome variables is reduced by the inclusion of a mediator. Field goes on to suggest that it is useful to present mediation analyses in a diagrammatic form, presenting: regression coefficients, the direct effect (including p values) and the indirect effect (including bootstrapping confidence intervals).

As discussed in the journal article, locus of causality could not be divided into a dichotomous variable (internal/external). Therefore, all six causal factors have been explored and recorded as predictor variables (i.e., 'chemical imbalance', 'own character', 'genetic factors', 'stressful life experiences', 'way he was raised', and 'God's will'). Behavioural intentions were considered to be an outcome variable (i.e., 'helping' and 'coercive') and the mediators included all four emotional responses (i.e., 'pity', 'fear', 'anger', 'sympathy/concern').

Figure 9 shows a schematic representation of these additional mediation models under investigation. Of the twelve models, six explored the relationship between locus of causality and helping behavioural intentions and six explored the relationship between locus of causality and coercive behavioural intentions. Figure 9 demonstrates that these variables were more complex than had been previously outlined (e.g., Corrigan et al., 2003; Willner & Smith, 2008a; 2008b). This secondary analysis found that four out of 12 mediation analyses demonstrated a statistically significant direct relationship between: (a) 'genetic factors' and 'coercive behavioural intentions', (b) 'own character' and 'coercive behavioural intentions', (c) 'God's will' and 'helping behavioural intentions', and (d) 'God's will' and 'coercive behavioural intentions'. However, ten out of the 12 mediation analyses highlighted the indirect relationship, suggesting that emotions mediate the pathway between locus of causality attributions and behavioural intentions. Despite being statistically significant, the indirect effect size was quite small. The variables that reached the threshold for a small sized effect ( $\rho = >.1$ ) were the indirect relationships between 'own character' and (a) 'helping behavioural intentions' ( $b = -.16$ , 95% CI  $[-.1978, -.1251]$ ) (b) 'coercive behavioural intentions' ( $b = .12$ , 95% CI  $[.0873, .1486]$ ) and 'God's will' and 'helping behavioural intentions' ( $b = .12$ , 95% CI  $[-.1878, -.0561]$ ). As noted in figure 9, there was no significant direct or indirect relationship between 'stressful life experiences' and (a) coercive behavioural intentions (direct effect,  $b = -.0095$ ,  $p = .6174$ ; indirect effect,

$b = .0080$  95% CI  $[-.0466, .0434]$ ; and (b) helpful behavioural intentions (direct effect,  $b = .0415$ ,  $p = .0872$ ; indirect effect,  $b = .0091$  95% CI  $[-.0307, .0479]$ ).



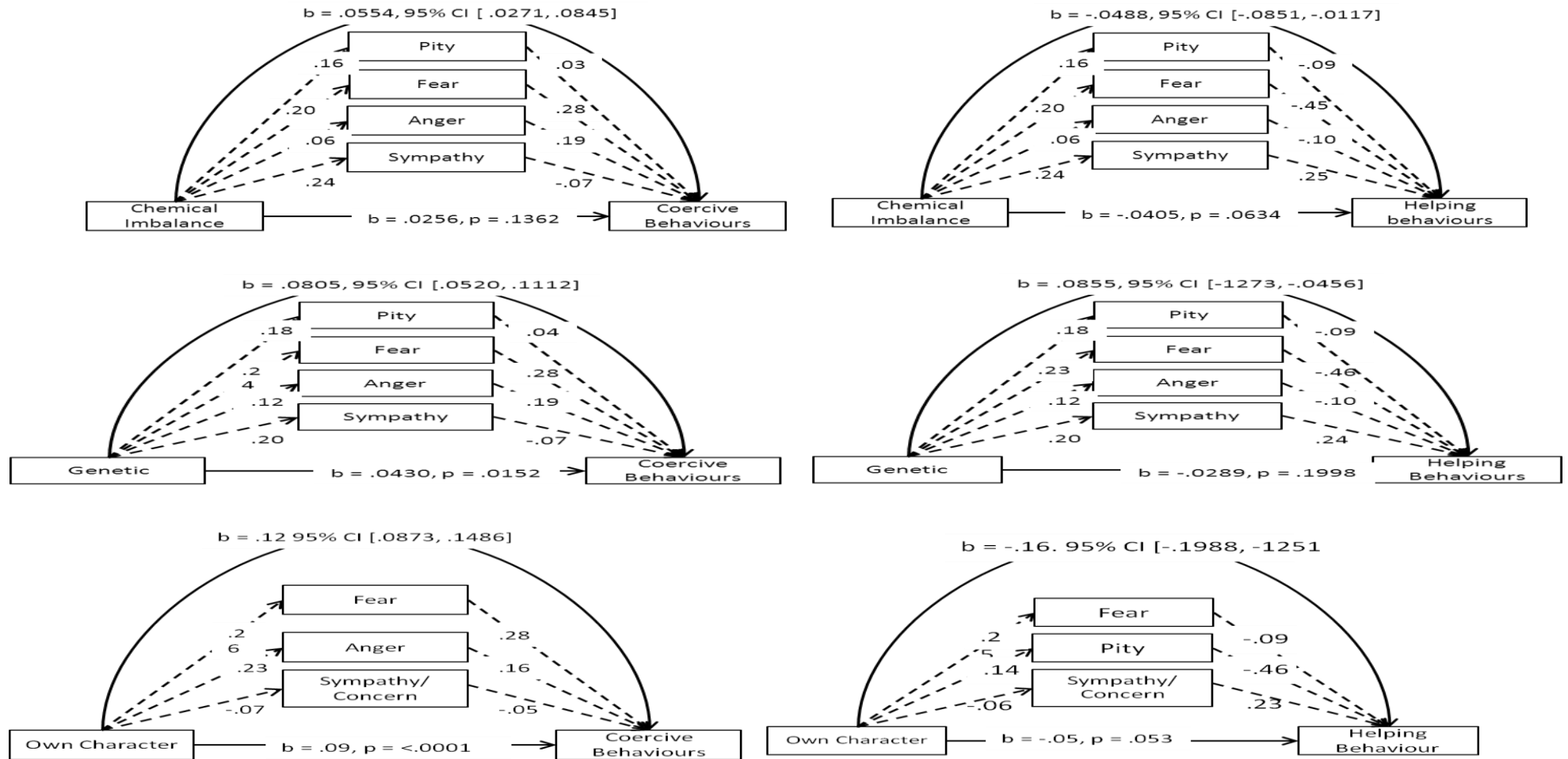


Figure 9. Schematic Diagram of showing emotional mediators influencing the relationship between locus of causality and behavioural intentions

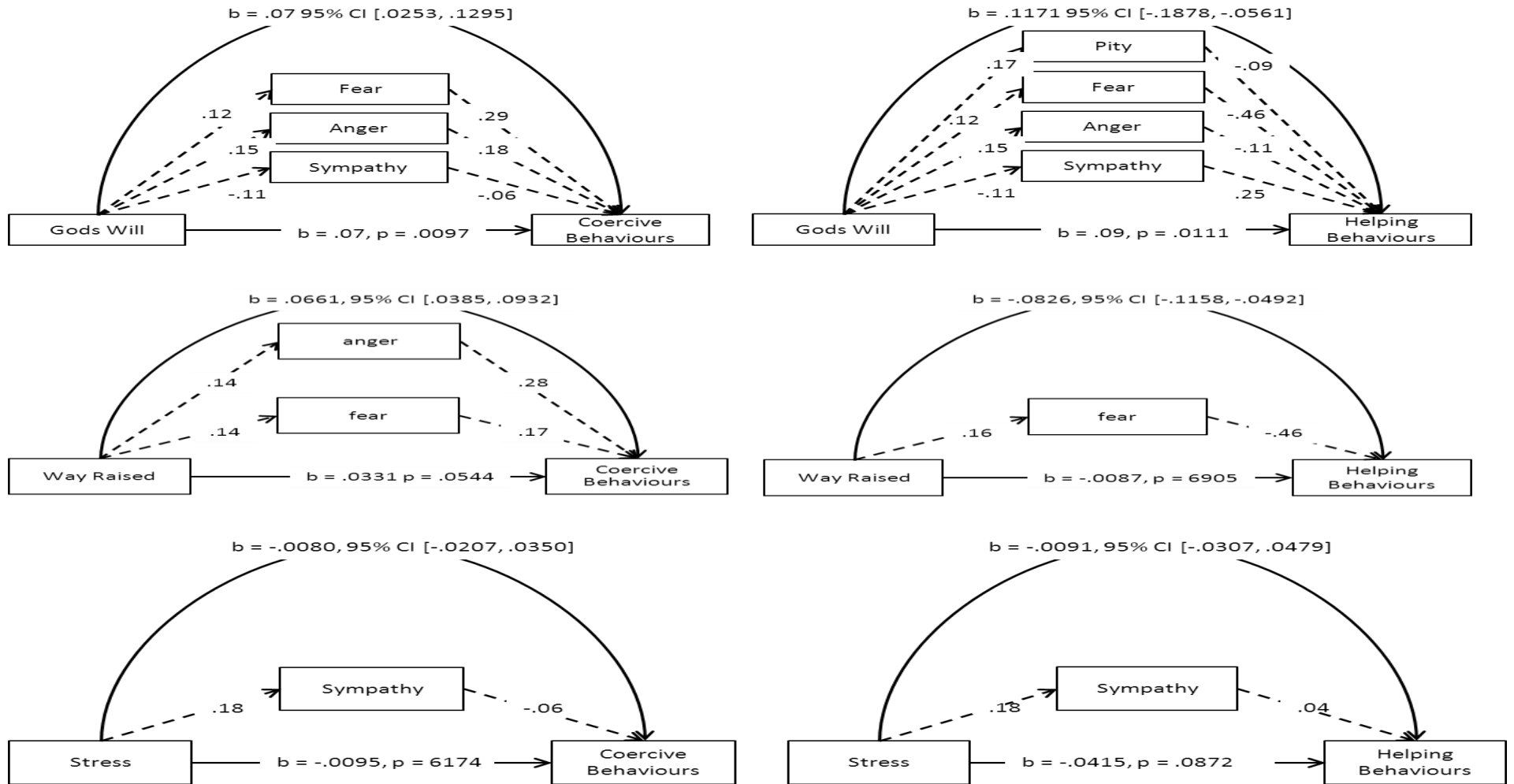


Figure 9. Continued

#### C.1.4. Additional Analysis for Locus of Causality

The present study used Spearman's product moment correlation to explore the relationship between locus of causality and attributions of (a) controllability, (b) responsibility, (c) dangerousness, (d) stability and (e) globality (as presented in table 7).

As can be seen in table 7, one variable, 'own character' influenced all five attributions to varying degrees. The strongest relationship was between 'own character' and 'personal responsibility' ( $\rho = .56, n = 1002, p < .01$ ). There was however, a small-to-medium sized negative relationship between 'genetic factors' and 'dangerousness' ( $\rho = -.225, n = 1002, p < .01$ ); and 'own character' and 'dangerousness' ( $\rho = -.233, n = 1002, p < .01$ ). A 'religious/spiritual' causal explanation produced two statistically significant relationships (a) 'personal responsibility' ( $\rho = .100, n = 1002, p < .01$ ); (b) 'globality' ( $\rho = .146, n = 1002, p < .01$ ). When participants considered 'stressful life experiences' it had a small sized effect with (a) 'controllability' ( $\rho = .180, n = 1002, p < .01$ ); (b) 'personal responsibility' ( $\rho = .167, n = 1002, p < .01$ ); (c) 'stability' ( $\rho = .30, n = 1002, p < .01$ ). These results therefore suggest that causal explanations appear to influence attributions, which were primed by the information contained in each conceptualisation. Own character and genetic causal explanations were associated with attributions of dangerousness.

Table 7:

A Spearman's Rho Correlation Analysis, exploring Locus of Causality and other attributions

Locus of Causality	Controllability	Responsibility	Dangerousness	Stability	Globality
Own character	.282*	.561*	.233*	.164*	.202
Chemical imbalance	.044	.101*	.192*	.003	.123*
Way he was raised	.181*	.334*	.186*	.208*	.093*
Stressful circumstances	.180*	.167*	.024	.302*	-.027
Genetic	.085*	-.002	.225*	.023	.195*
God's will	-.028	.100*	.044	-.011	.146*

Notes: \* Correlation significant at the .01 level

### C.1.5. Secondary Aims - Aim 3

The third aim of this study was to explore the extent which various socio-demographic variables influenced attributions. The relationships were analysed using Spearman's product-moment correlation coefficient, as the data violated some of the assumptions for normality (as outlined in second C.1.1.3). The results reported in table 9 are only those relationships that met the threshold for a small sized effect or above ( $\rho = >.1$ )<sup>43</sup> and were statistically significant ( $p = <.01$ ).

The strongest relationship, as outlined in table 8, was between professional familiarity and perceptions of dangerousness. For example, there was a small-to-medium negative correlation between these two variables ( $\rho = -.23$ ,  $n = 1002$ ,  $p <.01$ ). There was also a small-to-medium sized effect between 'professional familiarity' and 'personal responsibility' ( $\rho = -.20$ ,  $n = 1002$ ,  $p <.01$ ). There was also a positive small-to-medium correlation between the variables 'professional familiarity' and 'own character' ( $\rho = .20$ ,  $n = 1002$ ,  $p <.01$ ). However, 'personal experience' of voice-hearing was not as strongly associated with 'dangerousness' ( $\rho = -.11$ ,  $n = 1002$ ,  $p <.01$ ) or any other measure of attribution.

It was interesting to note that professional familiarity, level of education and interest in psychology produce similar sized effects on a number of attributions. However, there was a relationship between 'interest in psychology' and (a) 'professional familiarity', which produced a medium-to-strong sized effect ( $\rho = .400$ ,  $n = 1002$ ,  $p <.01$ ); (b) 'level of education', which produced a strong sized effect ( $\rho = .519$ ,  $n = 1002$ ,  $p <.01$ ).

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<sup>43</sup> Effect Size: Small  $\rho = .1$  Medium  $\rho = .3$  large  $\rho = .5$

Table 8:  
A Spearman's Rho Correlation Analysis between attributions and socio-demographic variables

Attributions	Age n = 854	Gender n = 1002	Familiarity with voice-hearing			Education level n = 1004	Interest in psychology n = 1004
			Personal	Family /Friend	Professional		
Controllability		.15*			-.14*		
Responsibility		.15*			-.20*		-.11*
Dangerousness		.11*	-.11*	-.17*	-.23*	.15*	-.20
Stability:	-.11*					.12*	.16*
Globality	.12*				-.12*	-.20*	-.14*
Locus of causality:							
Internal							
Own Character		-.14*			-.20*	-.11*	
Chemical Imbalance					-.12*		
Genetic Factors					-.12*		
External							
Way he was raised	-.14*					.13*	.13*
Stressful family environment	-.14*					.12*	.14*
God's will							

Notes \* Correlation is significant at the 0.01 level (two-tailed)

Social demographic variable - ethnicity, did not produce any correlations that reached the threshold for a small sized effect  $\rho = .1$

Levels of Education ranged from 0 = No formal education to 6 = Doctorate level education

Interest in Psychology ranged from 0 = No interest to 5 = Post Graduate level

Levels of Education ranged from 0 = No formal education to 6 = Doctorate level education

Personal familiarity was rated as yes/no, 91 participants stated they had personal experiences of voice-hearing

Family friend was rated as yes/no, 255 participants stated that they have family or friends who had experienced voice-hearing

Professional was rated as yes/ no responses, 292 participants stated that they worked with voice-hearers in a professional environment

## **Extended Discussion Chapter**

This chapter discuss the points raised in the journal article, integrating the findings from aim 2 and aim 3 where applicable. Any extended results that have not been subsumed under the relevant headers, will be discussed prior to moving on to addressing the study's limitations. Future research is identified throughout this extended discussion chapter, which will be concluded with the first author's critical reflections.

### **D.1. Primary Analysis**

**D.1.1. Emotional Responses.** Previous research has identified that the emotional response towards those with a mental illness is either anger or pity (e.g., Corrigan et al., 2003; Reizenstein, 1986; Weiner, 1995; Weiner, et al., 1982). Corrigan & Shapiro (2010) have advocated a second pathway, in that attributions of dangerousness result in fear, which mediates coercive behaviours and segregation. However, in the current research, preliminary analyses revealed that emotional responses are not so clear cut. The secondary analysis revealed that multiple emotional responses are activated to varying degrees, dependent on the attribution under investigation. Previous research (e.g., Corrigan et al., 2003) used three items within the construct 'pity' (i.e., pity, concern and sympathy) that under preliminary analysis did not hang together as demonstrated by a Cronbach's alpha score of .686. Field (2013), suggests that an alpha score of below .7 demonstrates a lack of reliability and poor internal consistency. Separating pity from the construct sympathy/concern improved reliability, as demonstrated by an improved alpha score ( $\alpha = .751$ ). It would appear that pity sat midway between negative emotions such as anger and fear and positive emotions such as sympathy and concern. Therefore, it may appear that the word pity no longer has a positive connotation as it has in the past. This requires further exploration.

### **D.1.2. Locus of Causality**

**D.1.2.1. Primary Aim.** Preliminary analysis revealed that questions related to internal (i.e., 'own character', 'chemical imbalance', and 'genetic factors') or external ('stressful life experiences', 'way he was raised' and 'God's will') causal explanations did not group reliably together as demonstrated by a low Cronbach's alpha score .354 and .404 respectively. Therefore, they were considered to have poor internal

consistency and thus reflected poor reliability (Field, 2013) Consequently, each question within this category was analysed and treated as a separate variable (see figure 8).

The primary analysis revealed that the conceptualisations primed participants' responses to locus of causality. For example, those who read the biogenetic conceptualisation, considered causal factors to be related to biological or genetic factors. Whereas, those who read the family intervention conceptualisation identified stressful life experiences or the way he raised as causal explanations.

**D.1.2.2. Secondary aim.** Further to the discussion in the journal article, locus of causality explanations were analysed (see figure 9). There was neither a direct or indirect association between stressful life experience and behavioural intentions. Interestingly, 'stressful life experiences' generated the emotional response of 'sympathy/concern'. This was the only positive response to causal explanations, and appeared to be the least stigmatising of all causal explanations.

Linking primary and secondary analysis, it would appear that the psychosocial, family intervention conceptualisation, primed participants' responses to the causal explanation of 'stressful life experiences'. In the light of this, a family intervention conceptualisation may be useful for future anti-stigma campaigns.

Conversely, the causal explanation 'way he was raised' did not produce a statistically significant direct relationship, but did produce a statistically significant indirect relationship. The emotional mediators of fear and anger that influenced coercive behavioural intentions were negative. The latter produced a small-to-medium sized effect. However, when considering the emotional mediators there was a strong negative correlation between fear and helping behavioural intention. This means that when participants rated their fear response as high, there was a reduction in the likelihood of engaging in helping behavioural intentions.

A comparison of these two psychosocial causal explanations ('way he was raised' and 'stressful life experiences') demonstrate that public perceptions cannot be so easily grouped and that differential psychosocial causal explanations produce different responses to attributions, emotions and behavioural intentions.

This challenges previous research assumptions that psychosocial conceptualisations reduce social distance and increase helping behaviours (Read



2007; Walker & Read, 2002), and highlights the importance of separating different psychosocial causal explanations. This research addressed only two of these explanations. Utilising the array of psychosocial causal explanations (e.g., sexual, physical, emotional abuse in childhood, bereavement issues, or veterans returning from conflict zones with post-traumatic stress disorders) in future research, may produce a far more complex picture than has emerged hitherto.

Other non-psychosocial causal explanations were also analysed. The causal explanation of 'own character' influenced a fear response, which in turn was negatively correlated with helping behavioural intentions which reflects previous research (e.g., Jorm & Griffiths, 2008). This indirect relationship was statistically significant, but the overall indirect effect size was small ( $b = -.16$ ).

Furthermore, biological and genetic explanations also influenced emotional responses, which mediated behavioural intentions. However, this indirect relationship was below the threshold for a small effect. The relationship between (a) 'chemical imbalance' and (b) 'genetics factors' and the emotional response of fear produced a small-to-medium sized effect. However, only genetic factors and fear were strongly negatively correlated with helping behavioural intentions. The results of this study suggest that 'biogenetic' causal explanations have produced mixed results.

When analysing locus of causality, biogenetic causal explanations produced a small-to-medium sized effect. However, when exploring the primary aim no difference between conceptualisations and a fear response. The results of this study challenge previous research (Read, 2007; Read & Law, 1999; Walker & Read, 2002), that found that biological or genetic explanations can lead to an increase in the emotional response of fear. It would seem that the evidence that biogenetic conceptualisations influence the emotional response of fear is inconclusive and requires further exploration.

### **D.1.3. Summary paragraph for Aim 3**

The third aim was to explore the extent to which various socio-demographic characteristics influenced attributions. However, during the analysis phase it was noted that when responding to the question 'ethnicity', participants recorded their nationality (e.g., white British, Chinese, American) and not their ethnicity. The

prompts, e.g., white British, Asian British, did not make clear the distinction between ethnicity and nationality. In addition, the current study used free-text boxes for participants to record their ethnicity. This could be considered to be a flaw in the design of the question, which future research should address, perhaps by providing a list of ethnic group choices. The definition of, and differences between, national identity and ethnicity is beyond the scope of this research, but need to be considered in future studies.

There was no statistically significant relationship between socio-demographic characteristics and nationality. However, this could be due to the majority of participants being British (92%), which may be a limitation of the sampling procedures. Previous research has found that British samples often have more positive attitudes than participants from other nations. This is discussed in more detail below.

Relationships that did not reach the threshold for a small relationship were excluded; only results reaching a small threshold were included in table 8. As can be seen, a number of fields are missing, which may suggest that age, gender, personal familiarity and family/friend familiarity did not influence attributions. These results are consistent with the findings from a systematic literature review (Jorm, Reavley & Ross, 2012) and are discussed in more depth when examining the relationship between socio-demographic characteristics and dangerousness.

To summarise, aim 3 was exploratory research to investigate socio-demographic variables on attributions. These results should be viewed with caution, as when reviewing the results presented in table 8, relationships only reached a small-to-medium effect. Furthermore, Bonferonni corrections were not applied to the p-value, which may mean that the results presented run the risk of producing a type-I error. Additionally, 'professional familiarity', 'level of education' and 'interest in psychology' were all strongly correlated with each other, and although responses to attributions have small differences, the nature and complexity of these relationships requires further exploration.

#### **D.1.4. Attributions: Dangerousness**

**D.1.4.1. Primary Aim.** As indicated in the journal article, attributions of dangerousness were not sensitive to differential conceptualisations. This supports the findings from a meta-analysis (Kvaale et al., 2013) that biogenetic explanations did not increase attributions of dangerousness towards those with psychological problems.

Despite not being statistically significant in the current study, many studies have considered attributions of dangerousness to be an identifiable factor in stigma (e.g., Angermeyer & Matschinger, 2003; Corrigan et al., 2002; Corrigan et al., 2003). However, dangerousness has been measured in multiple ways, with no particular measure being dominant. Studies have either used a single measure (e.g., Link et al., 1999), or multiple-item measures (e.g., Angermeyer & Matschinger, 2003; Corrigan et al., 2002; Corrigan et al., 2003).

In addition, many studies have used different types of analysis (e.g., factor analysis, cluster analysis or principle component analysis) to assess the impact of dangerousness on stigmatising responses. However, these studies have often included other factors (e.g., attributions, emotions and/or behaviours) within the construct of dangerousness. Jorm et al. (2012), suggested that studies that did not find attributions of dangerousness to be a factor generally have poorly represented this construct (Jorm et al., 2012). This criticism may be applied to the current study, as dangerousness was only represented by a single measure (i.e., how dangerous do you think John is?). It may be that future research utilises multiple measures (e.g., attributions of predictability; violent behaviours; or lacking in self-control).

**D.1.4.2. Dangerousness and nationality.** Previous research has found that attributions of dangerousness have been reported to be lower in British studies when compared with other countries (e.g., Furnham & Chan, 2004; Furnham & Muraio, 2000; Furnham, Raja & Khan, 2008). The findings of this study found no association between attributions of dangerousness and nationality, but given that, 92% of the sample were British it is hard to make such comparisons. However, participants in the current study did not consider voice-hearers to be overly dangerousness.

**D.1.4.3. Dangerousness and age/gender.** There was no significant association between age and dangerousness, which is in line with previous public attitude surveys (Angermeyer & Matschinger, 1996; Jorm & Griffiths, 2008). The

results of this study suggest a small association between dangerousness and gender. However, these results should be considered with caution, as there were more than twice as many women as men in the research sample. Previous research has examined gender differences and attributions of dangerousness and most studies report no gender differences (e.g., Angermeyer & Matchinger, 1996; Jorm & Griffiths, 2008; Link & Cullen, 1986).

**D.1.4.4. Dangerousness and familiarity.** In the current study, there was a small-sized effect between (a) personal familiarity, (b) family/friend familiarity, and dangerousness. This suggests that contact with voice-hearers reduces attributions of dangerousness. This reflects the findings of previous studies, which have found that familiarity reduces attributions of dangerousness (e.g., Angermeyer, et al., 2004; Brockington, Hall, Levings & Murphy, 1993; Corrigan et al., 2003; Read & Harré, 2001; Walker & Read, 2002; Wolkenstein & Meyer, 2009). However, others found no such association (e.g., Cooper, Corrigan & Watson 2003; Jorm & Griffiths, 2008; Phelan & Basow, 2007; Van Dorn, Swanson, Elbogen & Swartz, 2005). Jorm et al. (2012) conducted a systematic literature review and concluded that an association between personal familiarity and dangerousness is likely to be weak.

**D.1.4.5. Dangerousness and professional familiarity.** The results of the current study indicate that professional familiarity was slightly more influential than personal or family friend familiarity, as the current study found a small-to-medium sized effect between 'professional familiarity' and 'dangerousness'. Furthermore, given that this association was marginally stronger than family/friends and personal familiarity, this study would seem to support findings from previous research that suggest 'professional familiarity' reduces attributions of dangerousness more so than other types of familiarity (Jorm et al., 2012). However, these results should be interpreted with caution, as the current study did not identify the types of professional contact or the quality of the experience in either group.

To summarise, the overall findings regarding the relationship between familiarity and dangerousness are inconclusive. One possible explanation is that the current study did not investigate the quality of the contact. For example, people may have had negative experiences (e.g., physically harmed, or threatened with physical harm) which may negate any positive benefits of contact. Future research may want to investigate the quality of contact and its impact on attributions and social distance

(Jorm et al. 2012). Despite these inconclusive findings, no research has found that familiarity increases attributions of dangerousness (Jorm et al., 2012).

#### **D.1.5. Behavioural Outcome measure**

The results of the current study found that there was an association between helping behavioural intentions and helping behavioural outcomes. This relationship produced a small-to-medium sized effect. Coercive behavioural intentions were also negatively correlated with helping behavioural outcomes. The results of this study reflect the results of a meta-analysis (Webb & Sheeran, 2006), who concluded that a medium-to-large sized effect in behavioural intentions would lead to a small-to-medium sized effect in actual behaviour.

The task undertaken in the current study was different from the research by Corrigan et al. (2002; 2004) due to issues related to funding. An alternative behavioural outcome task was employed, that required participants to engage in an actual behaviour with a voice-hearer (i.e., selecting yes or no to providing an email address to engage in research). However, despite being an alternative task the results were not dissimilar to research by Corrigan and others (Corrigan et al., 2002; Corrigan et al., 2004). For example, the research by Corrigan et al. (2004) found that participants who reported that they were willing to help were likely to engage in an actual behaviour (e.g., donating money to a mental health charity). The current study also found that those who reported helping behavioural intention were correlated with a helping behavioural outcome measure (e.g., more willing to give their email address). However, those who reported more coercive behavioural intentions were less likely to engage in an actual behaviour. These participants were more likely to say 'no', to providing their email address.

As noted in the journal article, the current study found that behavioural intentions are correlated with actual behaviours. This adds to an already existing and extensive evidence base. For example, others have explored whether attitudes in general, and attributions in particular, correlated with behaviour. A comprehensive review (Petty & Cacioppo, 1996) noted that when: (a) attitudes and behaviours are measured appropriately (Ajzen & Fishbein, 1977), (b) attitudes are based on direct experience (Fazio & Zanna, 1981), and (c) behaviours require a preceding deliberative process to initiate (Triandis, 1977), there is a greater chance that people will engage in an actual behaviour. Therefore, there appears to be a specific

association between causal attributions, mediating emotional responses and subsequent behaviours. These results reflect previous studies (Dooley, 1995; Graham, Weiner, & Zucker, 1997; Reisenzein, 1986; Schmidt & Weiner, 1988; Weiner et al., 1982; Weiner, Perry, & Magnusson, 1988; and Zucker & Weiner, 1993).

Despite, the behavioural outcome measure producing results in line with previous research, there is, as noted in the journal article, a number of limitations of the behavioural outcome measure employed.

#### **D.1.6. Clinical Implications**

As discussed in the journal article, a number of clinical implications have emerged from the research. Given the analysis outlined in the results section, causal explanations were influenced by the type of conceptualisation that participants were offered. The family intervention group considered stressful life experiences to be a causal explanation for “John’s” voice-hearing experiences. This did not appear to produce stigmatising responses. In clinical practice though, family interventions are not always offered to voice-hearers (Prytys, Garety, Jolley, Onwumere & Craig, 2011). Prytys et al. (2011) found that although professionals would like to incorporate family interventions into their role with service users, time pressures, a pessimistic view of psychosis, and the potential for recovery, were considered to be a barrier. Belling et al. (2011) explored the facilitators and barriers in CMHTs and found that the medical model dominated the decision-making process and that mental health professionals were guided by this dominant model. As noted, genetic factors were associated with coercive behaviours, therefore, genetic conceptualisations may be more stigmatising

The results of this study would suggest that it may be useful to advocate a bio-psycho-social approach. This may reduce mental health professionals’ promotion of a stigmatising conceptualisation and thus may reduce self-stigma for voice-hearers. However, to ascertain whether this would produce any effective change in attitudes and behaviours to voice-hearers, further research is required.

### **D.1.7. Further Limitations and Future Research**

**D.1.7.1. Measures: Concurrent Validity.** The attribution questionnaire is considered to have concurrent validity, as it has been used and replicated in many studies (e.g., Corrigan et al., 2003) because the questionnaire encourages participants to respond to a specific person (i.e., John, a voice-hearer), rather than voice-hearers in general. This is considered to be a more sensitive measure of attitude, emotions and behaviours (Corrigan et al., 1999; Corrigan et al., 2002; Corrigan et al., 2003; Corrigan et al., 2004).

**D.1.7.2. External Validity.** Previous research studies have been criticised for investigating stigma by using university students. Corrigan et al. (2003) also developed and tested the attribution questionnaire on a college population sample, so this may have challenged the external validity of the attribution questionnaire. However, the current study may support the external validity of the attribution questionnaire as a wide range of participants recruited from multiple sources across the community oppose to previous studies that have used college based samples (e.g., Corrigan et al., 2003).

**D.1.7.3. Internal Validity.** Corrigan and Shapiro (2010), stated that researchers using a social psychological paradigm, work in controlled settings to manipulate the scope of investigate with a homogeneous group. They concluded that the results from these experiments are rich in internal validity, but are difficult to generalise. The current study used a heterogeneous sample, which may improve generalizability. However, the results of this study require replication, using a representative sampling approach.

**D.1.7.4. Social Validity.** Although both internal and external validity were considered, social validity was not considered when designing the current study. Social validity encourages reflectiveness on the need to target populations such as employers and other stakeholders within local communities, to enable change. Previous research has found that perceived discrimination towards those with mental health issues is more prevalent than racial discrimination, ageism and/or sexism (Cooper et al., 2003). Therefore, a limitation of the current study was that it failed to consider social validity in designing an experiment to understand whether differential conceptualisations may have influenced different stakeholders' attributions, emotions and behavioural intentions. One way for future research to overcome this limitation is

to engage in a representative sampling approach so that all stakeholders can be identified for comparison.

**D.1.7.5. Constructs: Personal responsibility.** Preliminary analysis indicated that the construct 'personal responsibility' did not have internal consistency, as demonstrated by a low alpha score ( $\alpha = .65$ ), which is below the .70 threshold for reliability (Field, 2013). Differentiating between 'controllability' and 'personal responsibility' improved reliability ( $\alpha = .73$ ). However, it has been argued that this rule should not be rigidly applied (Cortina, 1993) as alpha scores are influenced by the number of questions within the scale. Because of this, the present study used a single question (i.e., How controllable, do you think, is the cause of John's voice-hearing experiences?) to capture 'controllability'. This may not sufficiently have captured issues related to controllability. Therefore, it would be useful for future research to explore additional measures for controllability.

**D.1.7.7. Constructs: Dangerousness.** Like 'controllability', 'dangerousness' was also measured using a single question (i.e., how dangerous would you think John is?). It may have been useful to measure dangerousness with multiple questions. For example, Angermeyer et al. (2004) created and used a 'perceived dangerousness scale' in public attitude studies, which measures items related to dangerousness and dependency. This tool is considered to have good internal reliability as indexed by internal coefficients ranging from .81 to .88. Replication of this study using these additional measures, may be useful to ascertain a broader picture of the public's perception of dangerousness towards voice-hearers.

**D.1.7.7.1. Dangerousness and nationality.** A limitation of the current study was that there was a low percentage of participants from other countries. Future research may want to replicate this study with a multi-national sample as in some nationalities perceptions of dangerousness are higher (Jorm et al., 2012).

The majority (92%) of the participants surveyed were British and there appeared to be no apparent relationship between nationality and attributions of dangerousness. Future studies may wish to employ a representative sampling approach to recruitment and then replicate this study to test assumptions that the British public will have lower attributions of dangerousness than those from other countries.



**D.1.7.8. Behavioural intention Scales: Social desirability.** There are two main limitations to the validity of behavioural intention scales. The first of these is social desirability bias. The aim of public education and anti-stigma campaigns is to reduce social distancing, by making it clear to the general public that rejecting people simply because they have had contact with mental health services is prejudiced and wrong. Thus, participants may not have wanted to appear heartless or ignorant, and may have limited their responses to the behavioural intention measures (either intentionally or unintentionally) in order to appear caring and unprejudiced. The extent to which social desirability bias is operative is unknown, and therefore responses to behavioural intentions may have been understated. Corrigan and Shapiro (2010) would argue that participants may be unable to separate themselves from pro-social attitudes. It has been proposed that participants' responses to the stigma questions may be due to the wish to promote a positive image, either to themselves or to others (Tourangeau & Yan, 2007). Furthermore, people may want to avoid making negative statements in order to escape social condemnation (Corrigan & Shapiro, 2010). The current study attempted to overcome these limitations by creating a survey that participants could complete in private, anonymously and in their own time and space (Corrigan & Shapiro, 2010). However, an alternative way in which future research could address the issues related to social desirability would be to measure reaction times, as reaction times are expected to reveal implicit negative attitudes and stereotypes.

There is a suggestion, that self-reported explicit measures rely on the participants being aware of, and having control over, the measurement outcome (Fazio & Olson, 2003). Therefore, participants may monitor responses on explicit questionnaires (Fazio & Olson, 2003). A meta-analysis by Greenwald, Poehlman, Uhlmann and Banaji (2009) indicated that pressures to produce socially desirable responses were moderated when explicit measures are used to test associations. By contrast, implicit measures explore psychological attributes in an automatic manner, which is commonly referred to as automaticity (e.g., De Houwer, Teige-Mocigemba, Spruyt & Moors, 2009). Automaticity does not: (a) rely on participants' conscious efforts in order to access attitudes or attributions (e.g., Merikle & Reingold, 1991); (b) rely on participants' awareness (e.g., Brunel, Tietje & Greenwald, 2004), or (c) a great deal of attentional capacity (e.g., Moors & De Houwer, 2006; Moors, Spruyt, De Houwer & Gawronski, 2010). Future research should use both implicit

and explicit measures, in order to overcome issues related to social desirability (Corrigan & Shapirio, 2010) and to examine both implicit and explicit attributions towards voice-hearers.

#### **D.1.7.9. Behavioural intentions scales and behavioural outcome**

**measures.** Although behavioural intentions are often good predictors of actual behaviours (Link, Yang, Phelan & Collins, 2004; Webb & Sheeran, 2006), a further limitation to these scales is that they infer actual behaviour responses from reported intentions (Link et al., 2004). The current study attempted to overcome this limitation by measuring both behavioural intentions and actual behaviours. This study indicates that behavioural intentions can predict actual behaviours, but this needs further exploration as the behavioural outcome measure used in this study may have been too simplistic.

**D.1.6.10. Sample.** Another limitation of the survey was that it was difficult to ascertain the types of professional familiarity. For example did the professionals work in mental health services, voluntary sector organisations or in other establishments routinely working with voice-hearers. Another limitation was that the level of professional qualification, or type of contact with voice-hearers, was not ascertained. Future research may want to create questions that capture these issues and use them to replicate the current study. This would then create a more accurate representation of whether professional attitudes mirror public attitudes.

Notwithstanding these limitations, a strength of the study was its sample size. Nearly 1,400 people accessed the survey over a four-week period with 1,004 participants completing the survey. The sample also included 91 (9%) participants who identified that they had personal experience of voice-hearing. This is in line with reported prevalence rates of voice-hearing (Beavan et al., 2011). Furthermore, nearly 50% of participants recruited had some experience of proximity to voice-hearers. Because of the convenient sampling method, utilising a snowballing technique, a limitation of this study may be that people interested in voice hearing participated in the study, and therefore the sample may not be truly representative. This limits generalisability.

## **Critical Reflections**

The importance of critical reflection is to learn from research experiences and use these reflections to guide both professional practice and future research. This reflective section has been guided by four activities: (1) assumption analysis, (2) contextual awareness, (3) imaginative speculation and (4) reflective scepticism (Brookfield, 1998). Furthermore, Murray and Kujundzic, (2005) suggest that reflections of conducting research should be set within a broader context. Therefore, theoretical, epistemological and methodological issues will be considered.

### **E.1.1. Theoretical Considerations**

One of my biggest challenges was limiting the theoretical perspective of voice-hearing. Reflecting on theoretical issues has made me realise the array of models of voice-hearing, some of which were not included in this study, but were considered at various points throughout the course of it. This may have been due to the number of clients I had seen on clinical placements, or to conferences that I had attended, where the focus was on critical psychiatry. At these conferences, there were many service-users' accounts of experiencing voice-hearing as part of a schizophrenia diagnosis. These service-users had rejected medical conceptualisations, as they felt that the medical model represented an 'illness model' and they could never recover. Reflecting on this point, I was initially determined that psychological conceptualisations reflected a "truth" about causal explanations of voice-hearing. My hypothesis was that attributions towards voice-hearing would be more positive in psychological groups, with medical conceptualisations being the most stigmatising. Therefore, my results should have favoured psychological approaches. However, during the course of analysis, the results were starting to show patterns that did not support my hypothesis. This change allowed me to shift my dichotomous position of psychological versus medical models and see the relevance of multiple conceptualisations. Therefore, future research may benefit from exploring multiple conceptualisations (e.g., trauma, urbanisation and poverty) and the impact these have on attributions and behavioural intentions towards voice-hearers.

Another theoretical consideration that was reflected upon was attribution theory, which provides a useful model for understanding attitudes and behavioural intentions and has been used in research exploring stigmatisation and discrimination towards vulnerable groups. However, attribution theory has attracted criticisms.

Some authors have questioned whether attributions are just a way for people to generate causal explanation of a behaviour/situation or whether people make dispositional inference about personality traits from a behaviour (Hamilton, 1998; Malle, 2004). Furthermore, a major criticism levelled against attribution theory is that it cannot offer a mechanism to explain actual behaviour (Armitage & Conner, 2001). However, despite these limitations, attribution theory is a useful theoretical approach conceptualising attitudes and providing a causal mechanism (mediated by emotional responses) to predict behavioural intentions. This study took a hypo-deductive approach to testing the predictions made by attribution theory (Corrigan et al., 2003). Hypo-deductive approaches mean researchers are using theory to make testable predictions or hypotheses (Barker, Pistrang & Elliott, 2002).

Reflecting on this hypo-deductive approach I personally was more comfortable with this approach due to my experience of using it successfully in previous research (e.g., undergraduate and post-graduate level). My previous attempt at completing research on the course was from a more inductive, qualitative approach, which explored community mental health nurses' understanding and application of psychological approaches when working with voice-hearers. This extremely aversive experience of using qualitative research made me feel less confident to engage in inductive methodologies when designing the current study.

### **E.1.2. Epistemological and Methodological Considerations**

During the course of conducting this study, I reflected many times on my epistemological position. Potter (1998) has questioned attribution theory's positivist view. However, this study adopted an epistemological position from within a post-positivist stance, which assumes: (a) an objective reality exists and (b) that cognitive processes (e.g., attributions, emotions, behavioural intentions) are real, but can never be fully understood, given their subjective nature. The present study sought to objectively measure abstract constructs, using an adapted version of the attribution questionnaire, thus assuming that these constructs could be measured.

One area in particular that challenged my post-positivist assumptions, was the influence of societies' changing relationship with language in the forty years since attribution theory was first developed by Weiner and studied comprehensively by Corrigan. For example the word 'pity', has been used since the 13<sup>th</sup> Century to reflect concern for another person and has been grouped together with modern

synonyms (i.e., concern/sympathy). Within attribution theory, pity is considered to be a positive emotion, whereas fear and anger are considered to be negative emotions (Corrigan et al., 2003; Corrigan & Shapiro, 2010). However, when exploring the reliability of emotional constructs on the attribution questionnaire, pity, sympathy and concern were not semantically related. This was identified by taking a systematic approach to exploring whether constructs had internal consistency (Pallant, 2010) and was an important element of the preliminary analysis. Future research needs to explore the reliability of each construct and sub-question within each domain to ensure that they are fit for purpose within the 21<sup>st</sup> century.

I also noticed, during the course of data collection, that I became frustrated with quantitative method of data collecting. For example, participants emailed me to offer feedback and justification for their responses, which confused me initially as they had anonymity and I could not match responses to any particular participant. A theme that emerged from these emails was that participants wanted to share the context in which they provided responses, which was additional to the contextual factors presented in vignettes. Many participants wanted to share how the media had influenced their understanding. Familiarity of in-direct contact was not explored (e.g., television programmes such as: Crime dramas, newspaper) or the impact of headlines such as, '1,200 killed by mental patients' [Sun newspaper, October, 7 2013]) on participant's attributions. This study did not allow participants the opportunity to express opposing conceptualisations that they had seen or read about, prior to taking part in the study. Reflecting on this limitation, I wondered whether a mixed methods approach may have been able to capture this data.

A mixed methods approach may also have been useful to capture the array of explanations that people may make about locus of causality. This study indicates that the locus of causality variable was not as simple to measure as I had envisaged. It may be useful for future research to pilot the general public in order to gather an array of causal explanations. This would enable researchers to build an evidence base that is more encompassing of the public's understanding of the causal factors of voice-hearing (e.g., chemical imbalance in the brain, poor parenting, childhood traumatic experiences and bereavement). Once the pilot has been completed, it would be useful to make any necessary amendments and replicate the current study to see whether there are other non-stigmatising locus of causality explanations.

During the course of the research process, I became more and more frustrated with my choice of measure (i.e., attribution questionnaire). A number of participants emailed me after the survey had closed, giving a detailed account of decisions made when completing the attribution questionnaire. The topics raised by participants related to predictability, for example one person wrote that “John appeared unpredictable”, therefore they could not engage in social activities with him). Future research may need to capture the construct of predictability as this was not captured within the present study.

Analysis of the behavioural outcome measure indicated that there was a relationship between behavioural intentions and outcomes. The behavioural outcome measure was restricted to yes/no answers to the question “would you provide your email address to engage in future research with ‘Bill’, a voice-hearer”. In addition, it may have been useful to have a free-text box as many participants emailed me after the study to justify and expand on responses. For example (a) they were interested in taking part in future research “due to brother being a schizophrenic” and wanting to contribute to the research arena; (b) they were too busy at the present time so selected the no option, but if I was “desperate” then they would “help me out”; (c) they lived abroad so were not sure they would be eligible to take part; and (d) they did not feel that they had anything to offer on the topic of voice-hearing so thought they would be “wasting the researcher’s time”.

Another methodological consideration was the choice of sample and recruitment strategy. The structured of this study required a large sample size. Four weeks were dedicated to the management of the recruitment phase. At times, I wondered whether I could achieve the numbers required for this study within the time frame. On a positive note, the recruitment strategy (e.g., convenient sample, using snowballing techniques) worked exceptionally well. However, this study did not manage to attract cultural diversity. Therefore, future studies may need to approach minority ethnic groups, to ensure that all groups have a voice. This would also allow for comparisons about voice-hearing to be made between different ethnic groups.

Reflecting further on the sample used within this study, it may have been useful to have recruited a specific sample from mental health services. The evidence suggests that professional attitudes mirror public attitudes, but most studies have compared data from different research studies. It would be useful for future studies to

compare public and professional attitudes to the same vignette-design and questionnaire to see whether assumptions within the literature are an accurate reflection of mental health professional attitudes.

Furthermore, the number of participants recruited for this study who had familiarity with voice-hearing was quite low. Given the small numbers of participants that reported familiarity with voice-hearing, this study was unable to make comparisons between attributions made by the general public and (a) voice-hearers, (b) family and/or friends, and (c) mental health professionals. Future studies may find it helpful to recruit more participants who were familiar with voice-hearing. For example, recruiting from voice-hearer groups (e.g., hearing voices network) or carer groups (e.g., Rethink) would enable a broader evidence base and allow multiple comparisons to be made.

To conclude, conducting research has been one of the toughest challenges that I have faced during my DClinPsy. The process of completing research has encouraged me to re-evaluate my assumptions about the importance of conducting research and the skills acquired during this process. Reflecting on the write-up of this study has made me challenge my own assumptions about what constitutes good research. I have also re-considered my assumptions about psychological conceptualisations, constructs and measures. My frustrations over the dominance of psychiatric conceptualisations have been modified and my position made more tolerant, as I recognise the importance of integrating medical and psychological conceptualisations. Undertaking research has encouraged me to develop a tolerance for uncertainty and embrace the concept of 'not knowing' something, which would have been intolerable prior to commencing my DClinPsy. Furthermore, conducting research within a time frame and limited resources has helped me to manage time and resource constraints, which I think will be beneficial (in life after the doctorate course) in both research and clinical practice that I will undertake in the future.

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## **Appendices**

### **Appendix A: Participant Information Sheet**

#### **Public attitudes and beliefs towards individuals who experience voice-hearing**

We would like to invite you to take part in a research study. Before you decide if you would like to take part, it is important that you understand why the research is being done and what it would involve for you. Please take time to read the following information carefully and please feel free to talk to others about the study.

Part 1 tells you the purpose of this study and what will happen should you decide to take part.

Part 2 provides you with more detailed information about the study process and things you need to consider before confirming your consent to take part.

It is important that you have all the information you need to make a decision about whether you want to get involved in this study. Please feel free to contact the researcher if you would like more information or if there is anything that is not clear. Once you have read the information and have taken at least 24 hours to consider taking part in the research project, then you can proceed to the research survey, using the web-link provided at the end of this information.

#### **Part 1. Purpose of the study**

##### **1.1 Overview**

The researcher is a clinical psychology doctoral student at the University of Lincoln. The researcher is interested in finding out more about the attitudes in the general population about the perceived causes of voice-hearing and perceptions of people who experience voice-hearing. There are no right or wrong answers; we are interested in your opinions.

##### **1.2. Why have you been asked to take part?**

The researcher is interested in capturing a broad spectrum of views using convenience and snowball sampling – this means identifying people we think may be interested in taking part, and asking those who agree to take part to ask others to also take part.

### 1.3. Is taking part voluntary?

Yes. Taking part in the study is voluntary and it is up to you to decide whether you would like to take part or not. This information sheet outlines the research project to help you decide to take part. The researcher will happily answer any questions you have about the study. After you have read the information sheet and are happy to proceed you can access a consent form on the web-link below to state that you have agreed to participate.

### 1.4. Will my taking part in the study be kept confidential?

Yes. We will follow ethical practices and all information about you will be handled in confidence. The researcher will not ask you for any identifiable information during the research process.

This completes part 1.

If the information in Part 1 has interested you and you are considering taking part, please read the additional information in Part 2 before making any decision.

## **Part 2. What happens if you choose to take part?**

### 2.1 Practical implications

If you choose to take part you will be directed to a web-page using the web-link at the bottom of this information sheet. Completion of this study should take no more than 20 minutes.

### 2.2. What happens if I decide not to take part, or I change my mind?

You may choose not to give consent, or to withdraw from the study at any point, for which there will be no negative consequences. If you do decide to withdraw from the study you can request for the information you have provided to be destroyed until two weeks after responding to the questionnaire. After this date your anonymised questionnaire responses cannot be deleted.

### 2.3. Confidentiality

Because you will not be asked to give your name, there will be no way of telling which set of questionnaires are yours. If you decide to take part, it will be completely private unless you

choose to tell people that you have taken part, but there will be no way that they would be able to see your responses. No one will be informed of your involvement.

#### 2.4. What does the researcher do with your information?

The researcher is looking to compare the views of all the people who take part in order to look for similarities and differences.

#### 2.5. Storage of data

All data will be stored securely online and can only be accessed with a password. Only the researcher will know the password so your questionnaire will be very secure. Any data transferred from the online questionnaires will be stored on a passworded data stick and will be kept safely for seven years before being destroyed (which is usual university policy for data).

#### 2.6. Risks of taking part

The researcher does not think there are any significant risks of taking part; you can take part at any time of day that suits you, and the researcher is not looking for a right or wrong answer, just your opinions and views to the questions asked. If you do find anything about the research upsetting, the researcher has provided some support information in the debrief section at the end of the survey.

#### 2.7. Benefits of taking part

There are no direct benefits to you for taking part in this study. However, it is hoped that understanding public attitudes towards voice-hearers may influence and improve education packages potentially within mental health services and for anti-stigma campaigns.

#### 2.8. Quality Assurance

If you have any concerns or are worried about this study, you should email the researcher (details are at the bottom of this information sheet) who will do her best to answer your questions. If you remain unhappy and wish to complain, you can contact one of the research supervisors listed below.

## 2.9. Contact details for supervisors

Lead Research Supervisor  
Dr. Nima Moghaddam  
University of Lincoln  
Health, Life and Social Sciences  
University of Lincoln  
Health, Life and Social Sciences  
Bridge House, Brayford Pool  
Lincoln  
LN6 7TS

Research Supervisor  
Dr. Anna Tickle  
Research Tutor  
I-WHO,  
University of Nottingham  
International House, B Floor  
Jubilee Campus  
Wollaton Road  
Nottingham  
NG8 1BB

## 2.10. Who is organising and funding the research?

This study is being funded as part of a Doctoral course at the University of Lincoln.

## 2.11. Who has reviewed the study?

To protect your safety, rights, wellbeing and dignity, this research project has been reviewed and approved by the University of Lincoln Research Ethics Committee.

## 2.12. What will happen to the results of the research study?

The results of this study will be used by the researcher as part of their doctoral thesis which will be archived at the University of Lincoln and in the British Library's EThOS project, an electronic database of theses. In addition, this project will be submitted as an article for publication in the research community.

Thank you for reading this information sheet. If you would like to take part, please press the web-link which will direct you to a consent page.

## Appendix B: Consent form - Participants

Title of Project: Public attitudes and beliefs towards individuals who experience voice-hearing.

1. I confirm that I am aged 18 or over and that I have read and understand the information sheet dated (version 1) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.
2. I agree to participate in this study and to complete an online questionnaire for the purposes of the study described.
3. I understand that my participation is voluntary and I understand that I can withdraw my data from the study at any point up until two weeks after completing the questionnaire.
4. I understand that data will be kept confidential and securely and will be anonymised throughout.
5. I understand if I have any questions or concerns, that I can contact the researcher using the contact details given.

In order to proceed you must tick the box to confirm that you wish to take part in this study and confirm that you agree to all the above statements.

☐

## Appendix C: Debrief

Thank you for taking part in this research project. On the last page you were asked if you would consider taking part in future research with a person who had similar experiences to John. The purpose of this question was to measure your behavioural intentions towards people who experience these kinds of difficulties. There are no right or wrong answers and the research is looking to explore whether the different types of information provided to different participants produced different responses.

Below are the other case studies that have been used within this research project. All participants were randomly selected to one of the case studies. As yet there is no common consensus amongst the evidence base to suggest that one view is more beneficial or more accurate than others. However, many anti-stigma campaigns are based on a medical model which incorporates biological and genetic factors as key in the development of voice-hearing. Most voice-hearers are then given a diagnosis and treated with medication. Current evidence suggests that this approach may not be a useful framework to reduce stigma or beliefs about the dangerousness of people who hear voices. Therefore, this study aims to explore what influence different types of information have on public perceptions; you were allocated to one of these case studies to see whether the information provided influenced your perceptions and attitudes.

Case study one was informed from a biological/genetic model which is still dominant within mental health services.

"John is 24 and lives at home with his parents. He hears voices that other people cannot hear. Sometimes they sound like whispers and at other times can be very loud. Sometimes the voices seem supportive, for example by telling John that he can achieve something he is nervous about. At other times they call him names or make fun of him. They also tell him to do things that he does not want to, for example stay in his house rather than go anywhere. This causes him distress".

### An explanation of John's voice-hearing experiences

Voice-hearing may be a symptom of a biological disorder involving chemical or structural changes in the brain. Voice-hearers may produce too much of the brain chemicals that are linked to how emotions and perceptions are processed, and this may underlie the experience of 'hearing' voices. Furthermore, it has been shown that some people who hear voices have slightly different brain structures because their brains may not have developed in the usual way. Such brain differences tend to run in families and probably have a genetic basis. For



example, it is likely that some of John's relatives will also experience voice-hearing. One way to manage voice-hearing is with antipsychotic medication – which aims to rebalance the level of chemicals in an individual's brain and thereby eliminate or reduce the voices.

## 128

Case study two was informed from a Cognitive Behavioural Therapy model as this appears to be a popular therapeutic model within mental health services and is recommended by NHS guidelines.

"John is 24 and lives at home with his parents. He hears voices that other people cannot hear. Sometimes they sound like whispers and at other times can be very loud. Sometimes the voices seem supportive, for example by telling John that he can achieve something he is nervous about. At other times they call him names or make fun of him. They also tell him to do things that he does not want to, for example stay in his house rather than go anywhere. This causes him distress".

### An explanation of John's voice-hearing experiences

People sometimes 'hear' their own thoughts as though they are external to them. This experience is quite common, as the way we listen to our own thoughts is similar to how we hear others talking. The important thing is how we make sense of these experiences: our beliefs about the identity power, and intent of the 'voices'. For example, if John believes his voices are powerful and dangerous, he is more likely to be distressed by them and to react in unhelpful ways. Beliefs that people have about their voices may reflect deeper beliefs about themselves and others.

If someone is troubled by their voices, one way to manage voice-hearing is with Cognitive Behavioural Therapy – which aims to change how people think about and respond to their voices. **128**

Case study three was informed from a family interventions model, which although recommended by the NHS, is not commonly used within mental health services.

"John is 24 and lives at home with his parents. He hears voices that other people cannot hear. Sometimes they sound like whispers and at other times can be very loud. Sometimes the voices seem supportive, for example by telling John that he can achieve something he is nervous about. At other times they call him names or make fun of him. They also tell him to do things that he does not want to, for example stay in his house rather than go anywhere. This causes him distress".

### An explanation of John's voice-hearing experiences

Voice-hearing experiences can be triggered by too much stress. Some people may be more vulnerable to the effects of stress than others, so the amount of stress that is 'too much' will vary from person to person.

There are a number of reasons why a person may be particularly vulnerable to stress, including: Genetic predisposition, personality factors, or previous traumatic experiences. Stress could come from many sources. In John's case, it may be that his home environment is stressful; for example, he may get drawn into emotional arguments between his parents.

In cases where a voice-hearer is in close contact with their family, one way to manage voice-hearing experiences is with Family Therapy – which aims to reduce the level of stressful interactions and increase support within the family. **128**

Case study four was informed by a non-mental health perspective and explores religious and spiritual frameworks that some people may find helpful.

"John is 24 and lives at home with his parents. He hears voices that other people cannot hear. Sometimes they sound like whispers and at other times can be very loud. Sometimes the voices seem supportive, for example by telling John that he can achieve something he is nervous about. At other times they call him names or make fun of him. They also tell him to do things that he does not want to, for example stay in his house rather than go anywhere. This at times causes him to feel distress".

### An explanation of John's voice-hearing experiences

People who hear voices may have a special spiritual sensitivity which enables them to communicate in ways that are outside of conventional understanding. Some religious and spiritual practitioners would interpret voice-hearing as a divine gift or spiritual possession. For example, John's experiences could mean that someone or something is trying to communicate through him. It has been suggested that most people have some form of spiritual sensitivity (or 'psychic ability') available to them and that they can learn how to develop and control this over time. One way to manage voice-hearing experiences is through support from a spiritual or religious leader. Such individuals aim to provide guidance and spiritual advice – this may include interpretation of the meaning of the voices and their relationship to spiritual and/or religious matters. **128**

Furthermore, it is important to note that many members of the general public hear voices at some point in their lives, for example, when they are tired or distracted. Many people who

hear voices do not access support from mental health services as they are not distressed by their experience or do not consider themselves to be suffering with a mental illness.

If you are unhappy with the nature of this study and you wish to withdraw your data then please email the researcher (details below) within two weeks of today (of the date you completed this study) providing your unique identification code and they will withdraw your data. After this time they will be unable to withdraw your data from study as it will have been entered on to an anonymised database.

If you have experienced any distress due to the nature of this study, then please contact your GP in the first instance. If you would like to know more about voice-hearing, then please select one of the links below.

[www.rethink.org](http://www.rethink.org)

<http://www.hearing-voices.org>

[http://www.healthtalkonline.org/mental\\_health/Experiences\\_of\\_psychosis](http://www.healthtalkonline.org/mental_health/Experiences_of_psychosis)

<http://www.nhs.uk/conditions/hallucinations/Pages/Introduction.aspx>

Researchers name: Deborah Kingston

Email: [06075465@students.lincoln.ac.uk](mailto:06075465@students.lincoln.ac.uk)

## Appendix D: Survey

### Demographics

Gender   ☐ Male      ☐ Female

Age .....

What is the highest degree or level of education you have completed or are in the process of completing?

- ☐ No formal qualifications
- ☐ GCSEs (previously O levels), National Vocational Qualifications (NVQ -levels 1-3)
- ☐ A levels
- ☐ Higher education qualification below degree level
- ☐ Bachelor's degree or professional equivalent (for example: BA, BSc)
- ☐ Master's degree or professional equivalent (for example: MA, MSc)
- ☐ Doctorate degree (for example: PhD, EdPsych)

Doctorate in clinical psychology (DClinPsy)

- ☐ Current trainee
- ☐ Completed

Medical Doctorate (please specify specialism e.g., GP, Psychiatrist)

- ☐ Current trainee
- ☐ Completed

Previous experience of psychology

- ☐ No experience of psychology
- ☐ Casual interest only (e.g., magazines, Television programmes, books)
- ☐ Course attendance
- ☐ Undergraduate degree
- ☐ Postgraduate degree

Which ethnicity best describes you?

White British,

White Irish,

Any other White background please specify.....

White and Black Caribbean

White and Black African

White and Asian

Indian  
Pakistani  
Bangladeshi  
Black Caribbean  
Black African  
Any other Black background please specify.....  
Chinese  
Other.....  
Prefer not to say

### **Spirituality/Religious beliefs**

Please read the following definition:

By religion, we mean the actual practice of a faith, e.g. going to a temple, mosque, church or synagogue, or even practicing your religion at home. Some people do not follow a religion but do have spiritual beliefs or experiences. Some people make sense of their lives without any religious or spiritual beliefs.

Would you say that you have a religious or spiritual understanding of your life?

- ☐ Religious
- ☐ Spiritual
- ☐ Both
- ☐ Neither

### **Questionnaire**

#### **CREATE YOUR UNIQUE PARTICIPANT IDENTIFICATION CODE**

You will now be asked to create your unique participant identification code. This will enable us to identify your responses (in case you ask us to withdraw your data from the study) whilst protecting your anonymity.

To create your unique participant identification code please enter the first three letters of your mother's maiden name and the date (day of the month) you were born.

If your mother's maiden name is Smith and you were born on the 23rd June you would enter SMI23

Please enter your code in the box below

### **Personal Responsibility Beliefs**

1. I would think that it is John's own fault that he experiences voice-hearing (1 = no, not at all; 9 = yes, absolutely so)
2. How controllable, do you think, is the cause of John's voice-hearing experiences? (1 = not at all under his control; 9 = completely under his control)
3. How responsible, do you think, is John for his voice-hearing experiences? (1 = not at all responsible; 9 = very much responsible)

### **Locus of Causality**

Thinking about John, please rate the degree to which you believe the following statements are true regarding the cause of voice-hearing experiences.

1. It is caused by his own character (1 = not likely; 9 very likely)
2. It is caused by a chemical imbalance in his brain (1 = not likely; 9 very likely)
3. It is caused by the way he was raised (1 = not likely; 9 very likely)
4. It is caused by stressful circumstances in his life (1 = not likely; 9 very likely)
5. It is a genetic or inherited problem (1 = not likely; 9 very likely)
6. It is God's will (1 = not likely; 9 very likely)

### **Stability & Globality**

1. How likely is it, do you think, John's voice-hearing experiences will change over time? (1 = not likely; 9 very likely)
2. I would think that John's voice-hearing occurs in every situation he encounters (1 = no not at all; 9 = to absolutely so).

### **Pity**

1. I would feel pity for John. (1 = none at all; 9 = very much)
2. How much sympathy would you feel for John? (1 = none at all; 9 = very much)
3. How much concern would you feel for John? (1 = none at all; 9 = very much)

### **Anger**

1. I would feel aggravated by John. (1 = not at all; 9 = very much)
2. How angry would you feel at John? (1 = not at all; 9 = very much)
3. How irritated would you feel by John? (1 = not at all; 9 = very much)

### **Fear**

1. How dangerous would you feel John is? (1 = not at all; 9 = very much)
2. I would feel threatened by John. (1 = no, not at all; 9 = yes, very much)
3. I would feel scared of John. (1 = not at all; 9 = very much)
4. How frightened of John would you feel? (1 = not at all; 9 = very much)

### **Helping**

1. How certain do you feel that you would help John,, if he asked you to? (1 = not at all certain; 9 = absolutely certain)
2. If I were an employer, I would interview John for a job. (1 = not likely; 9 = very likely)
3. If I were a landlord, I probably would rent an apartment to John. (1 = not likely; 9 = very likely)
4. How likely is it, do you think, that John would need to seek help? (1 = not likely; 9 = very likely)
5. How likely is it that John could be help to manage his voice, if he sought support (1 = not likely; 9 = very likely)

### **Social distance**

1. I would share a car pool with John each day. (1 = not likely; 9 = very likely)
2. If I had, or have children, I would employ John as a babysitter (1 = not likely; 9 = very likely)
3. I would be willing to accept John as a workmate (1 = not likely; 9 = very likely)
4. I would be willing to socialise with John (1 = not likely; 9 = very likely)
5. I would not mind John having a romantic relationship with someone in my family (1 = not likely; 9 = very likely)
6. I would be willing to accept John as a neighbour (1 = not likely; 9 = very likely)

### **Coercion-Segregation**

1. I think John poses a risk to his neighbours and needs to be hospitalised. (1 = not at all; 9 = very much)
2. I think it would be best for John's community if he were put away in a psychiatric hospital. (1 = not at all; 9 = very much)
3. How much do you think an asylum, where John can be kept away from his neighbours, is best? (1 = not at all; 9 = very much)
4. If I were in charge of John's treatment, I would force him to live in a group home. (1 = not at all; 9 = very much)

### **Familiarity with Voice-hearing**

1. Have you experienced voice-hearing?
  - o Yes
  - o No

2. Does anyone in your family experience voice-hearing?

☐ Yes

☐ No

3. Have you worked with individuals who experience voice-hearing in a professional or volunteer setting?

☐ Yes

☐ No

If Yes in what capacity (e.g. CPN, Social Worker, Psychologist)

5. Do you know of a friend, co-worker, or neighbour who experiences voice-hearing?

☐ Yes

☐ No

6. Does a family or close friend work with people who experience voice-hearing?

☐ Yes

☐ No

### **Invitation for further study**

A colleague of ours, Bill Harper, is conducting an interview-based study on a similar topic to this questionnaire study. Bill has lifelong experience of voice-hearing himself and is interested in how people learn about voice-hearing (e.g., through media, education, or personal experiences). Interview participants will be compensated for their time. Please tick this box [ ☐ ]. If you have ticked this box you will be asked for your contact details on the next page so that Bill to contact you and provide more information about the interview study.



## Appendix E: Ethical Approval



UNIVERSITY OF  
**LINCOLN**

07-03-2013

Dear Deborah Kingston,

The Ethics Committee of the School of Psychology would like to inform you that at our meeting on the 5.03.2013 your proposal ' How do differential conceptualisations of voice-hearing influence perception and intentions towards voice-hearers'

was:

☒ **approved**

It has been allocated the reference number 130305-3.

Yours sincerely,

Patrick Bourke, PhD

Chair of the Ethics Committee School of Psychology University of Lincoln

Brayford Campus

Lincoln LN6 7TS United Kingdom

telephone: +44 (0)1522 886140

## Appendix F: Email to alter working in attribution questions/vignettes

From: Deborah Kingston (06075465)

### Actions

In response to the message from Patrick Bourke, 15/03/2013

To: Patrick Bourke

### Attachments:

vignettes for ethics amen~1.docx (17 KB)[Open as Web Page]

### Sent Items

17 March 2013 11:42

This message was sent with High importance.

Dear Patrick, I have made a few changes to some questions and vignettes.

The vignettes required changing to make explicit the explanatory framework e.g., in the aetiology and maintenance of voice hearing. I have attached the vignettes that were previously approved and the amended versions. I hope this is clearer than the email I sent to you on Friday.

As I said in my previous email, the questionnaire has been altered e.g., likert scale has changed from 1-9 to 0-8. Furthermore, the wording has been changed to make it easier for participants to respond personally to the questions in the original questionnaire the phrasing was:

### **Personal Responsibility Beliefs**

1. Do you think that it is John's own fault that he experiences voice-hearing (1 = no, not at all; 9 = yes, absolutely so)
2. How controllable, do you think, is the cause of John's voice-hearing experiences? (0 = not at all under personal control; 8 = completely under personal control)
3. How responsible, do you think, is John for his voice-hearing experiences? (0 = not at all responsible; 8 = very much responsible)

This has been changed to:

### **Personal Responsibility Beliefs**

#### **I would think that:**

1. It is John's own fault that he experiences voice-hearing (0 = not at all, 8 = absolutely)
2. The cause of John's voice-hearing experiences is controllable (0 = not at all, 8 = absolutely)
3. John is responsible for his voice-hearing experiences (0 = not at all, 8 = absolutely)

### **Dangerousness**

4. John is dangerous (0 = not at all, 8 = absolutely) (This question used to be under the header of fear)
5. John would need to seek help (0 = not at all, 8 = absolutely) (this question used to be under the header of helping)
6. If he sought help, John could be helped to manage his voices (0 = not at all, 8 = absolutely) (this question used to be under the header of helping)

Please let me know if you need any more information.

Thank you  
Debs

Regards

Debs

Deborah Kingston

Trainee Clinical Psychologist

<p><b>Biogenetic</b></p> <p><b>Ethics approved version</b></p>	<p><b>Biogenetic</b></p> <p><b>Amended version</b></p>
<p>"John is 24 and lives at home with his parents. He hears voices that other people cannot hear. Sometimes they sound like whispers and at other times can be very loud. Sometimes the voices seem supportive, for example by telling John that he can achieve something he is nervous about. At other times they call him names or make fun of him. They also tell him to do things that he does not want to, for example stay in his house rather than go anywhere. This causes him distress".</p> <p>John's experience of voice-hearing may be a symptom of a biological disorder involving chemical or structural changes in his brain. Such a disorder probably has a genetic basis - it is likely that other people in John's family will also hear voices. One way to manage voice-hearing experiences is with antipsychotic medication. <b>138</b></p>	<p>"John is 24 and lives at home with his parents. He hears voices that other people cannot hear. Sometimes they sound like whispers and at other times can be very loud. Sometimes the voices seem supportive, for example by telling John that he can achieve something he is nervous about. At other times they call him names or make fun of him. They also tell him to do things that he does not want to, for example stay in his house rather than go anywhere. This causes him distress".</p> <p><u>An explanation of John's voice-hearing experiences</u> Voice-hearing may be a symptom of a biological disorder involving chemical or structural changes in the brain. Voice-hearers may produce too much of the brain chemicals that are linked to how emotions and perceptions are processed, and this may underlie the experience of 'hearing' voices. Furthermore, it has been shown that some people who hear voices have slightly different brain structures because their brains may not have developed in the usual way. Such brain differences tend to run in families and probably have a genetic basis. For example, it is likely that some of John's relatives will also experience voice-hearing. One way to manage voice-hearing is with antipsychotic medication – which aims to rebalance the level of chemicals in an individual's brain and thereby eliminate or reduce the voices.</p> <p><b>128</b></p>

<p style="text-align: center;"><b>CBT</b></p> <p style="text-align: center;"><b>Ethics approved version</b></p>	<p style="text-align: center;"><b>CBT</b></p> <p style="text-align: center;"><b>Amended version</b></p>
<p>"John is 24 and lives at home with his parents. He hears voices that other people cannot hear. Sometimes they sound like whispers and at other times can be very loud. Sometimes the voices seem supportive, for example by telling John that he can achieve something he is nervous about. At other times they call him names or make fun of him. They also tell him to do things that he does not want to, for example stay in his house rather than go anywhere. This causes him distress".</p> <p>John's experiences of voice-hearing may be viewed as his own thoughts, memories and plans from which he has become detached from. Such changes may have been due to early traumatic events which may influence the way information is processed.</p> <p>One way to manage the voice-hearing experiences is with Cognitive Behavioural Therapy. <b>140</b></p>	<p>"John is 24 and lives at home with his parents. He hears voices that other people cannot hear. Sometimes they sound like whispers and at other times can be very loud. Sometimes the voices seem supportive, for example by telling John that he can achieve something he is nervous about. At other times they call him names or make fun of him. They also tell him to do things that he does not want to, for example stay in his house rather than go anywhere. This causes him distress".</p> <p><u>An explanation of John's voice-hearing experiences</u></p> <p>People sometimes 'hear' their own thoughts as though they are external to them. This experience is quite common, as the way we listen to our own thoughts is similar to how we hear others talking. The important thing is how we make sense of these experiences: our beliefs about the identity power, and intent of the 'voices'. For example, if John believes his voices are powerful and dangerous, he is more likely to be distressed by them and to react in unhelpful ways. Beliefs that people have about their voices may reflect deeper beliefs about themselves and others.</p> <p>If someone is troubled by their voices, one way to manage voice-hearing is with Cognitive Behavioural Therapy – which aims to change how people think about and respond to their voices. <b>128</b></p>

<p><b>Systemic / expressed emotion</b></p> <p><b>Ethics approved version</b></p>	<p><b>Systemic / expressed emotion</b></p> <p><b>Amended version</b></p>
<p>"John is 24 and lives at home with his parents. He hears voices that other people cannot hear. Sometimes they sound like whispers and at other times can be very loud. Sometimes the voices seem supportive, for example by telling John that he can achieve something he is nervous about. At other times they call him names or make fun of him. They also tell him to do things that he does not want to, for example stay in his house rather than go anywhere. This causes him distress".</p> <p>John's experiences of voice-hearing may be linked to John's family stressful upbringing as his family may have displayed high levels of expressed emotions. Some people are particularly vulnerable to this kind of stress and this can lead to voice-hearing. One way to manage voice-hearing experiences is with Family Interventions. <b>138</b></p>	<p>"John is 24 and lives at home with his parents. He hears voices that other people cannot hear. Sometimes they sound like whispers and at other times can be very loud. Sometimes the voices seem supportive, for example by telling John that he can achieve something he is nervous about. At other times they call him names or make fun of him. They also tell him to do things that he does not want to, for example stay in his house rather than go anywhere. This causes him distress".</p> <p><u>An explanation of John's voice-hearing experiences</u>  Voice-hearing experiences can be triggered by too much stress. Some people may be more vulnerable to the effects of stress than others, so the amount of stress that is 'too much' will vary from person to person.  There are a number of reasons why a person may be particularly vulnerable to stress, including: genetic predisposition, personality factors, or previous traumatic experiences. Stress could come from many sources. In John's case, it may be that his home environment is stressful; for example, he may get drawn into emotional arguments between his parents.  In cases where a voice-hearer is in close contact with their family, one way to manage voice-hearing experiences is with Family Therapy – which aims to reduce the level of stressful interactions and increase support within the family. <b>128</b></p>

<p style="text-align: center;"><b>Spiritual</b></p> <p style="text-align: center;"><b>Ethics approved version</b></p>	<p style="text-align: center;"><b>Spiritual</b></p> <p style="text-align: center;"><b>Amended version</b></p>
<p>"John is 24 and lives at home with his parents. He hears voices that other people cannot hear. Sometimes they sound like whispers and at other times can be very loud. Sometimes the voices seem supportive, for example by telling John that he can achieve something he is nervous about. At other times they call him names or make fun of him. They also tell him to do things that he does not want to, for example stay in his house rather than go anywhere. This at times causes him to feel distress".</p> <p>John's experiences of voice-hearing may be linked to his spiritual and religious beliefs. One way to manage voice-hearing experiences would be to seek guidance, advice or support from a spiritual or religious leader. <b>126</b></p>	<p>"John is 24 and lives at home with his parents. He hears voices that other people cannot hear. Sometimes they sound like whispers and at other times can be very loud. Sometimes the voices seem supportive, for example by telling John that he can achieve something he is nervous about. At other times they call him names or make fun of him. They also tell him to do things that he does not want to, for example stay in his house rather than go anywhere. This at times causes him to feel distress".</p> <p><u>An explanation of John's voice-hearing experiences</u></p> <p>People who hear voices may have a special spiritual sensitivity which enables them to communicate in ways that are outside of conventional understanding. Some religious and spiritual practitioners would interpret voice-hearing as a divine gift or spiritual possession. For example, John's experiences could mean that someone or something is trying to communicate through him. It has been suggested that most people have some form of spiritual sensitivity (or 'psychic ability') available to them and that they can learn how to develop and control this over time. One way to manage voice-hearing experiences is through support from a spiritual or religious leader. Such individuals aim to provide guidance and spiritual advice – this may include interpretation of the meaning of the voices and their relationship to spiritual and/or religious matters. <b>128</b></p>

**Control****Ethics approved version – remains the same**

"John is 24 and lives at home with his parents. He hears voices that other people cannot hear. Sometimes they sound like whispers and at other times can be very loud. Sometimes the voices seem supportive, for example by telling John that he can achieve something he is nervous about. At other times they call him names or make fun of him. They also tell him to do things that he does not want to, for example stay in his house rather than go anywhere. This at times causes him to feel distress". 93



## Appendix G: Ethical Approval for amendments to protocols



UNIVERSITY OF  
**LINCOLN**

19-03-2013

Dear Deborah Kingston,

Following on the Ethics Committee of the School of Psychology decision on the 5.03.2013 to approve your proposal 'How do differential conceptualisations of voice-hearing influence perception and intentions towards voice-hearers' I am happy to approve by Chairs Action the small changes to wording that you have proposed..

Your modified proposal is:

☒ **approved**

It has been allocated the reference number 130305-3b.

Yours sincerely,

A handwritten signature in blue ink, reading 'Patrick Bourke'.

Patrick Bourke, PhD

Chair of the Ethics Committee School of Psychology University of Lincoln  
Brayford Campus Lincoln LN6 7TS United Kingdom  
Telephone: +44 (0)1522 886140

## **Appendix H: Adapted Attribution Questionnaire**

### **Personal Responsibility Beliefs**

1. It is John's own fault that he experiences voice-hearing (0 = not at all, 8 = absolutely)
2. The cause of John's voice-hearing experiences is controllable (0 = not at all, 8 = absolutely)
3. John is responsible for his voice-hearing experiences (0 = not at all, 8 = absolutely)

### **Controllability Scale**

Thinking about John, please rate the degree to which you believe the following statements are true regarding the cause of voice-hearing experiences.

1. It is caused by his own character (0 = not likely; 8 very likely)
2. It is caused by a chemical imbalance in his brain (0 = not likely; 8 very likely)
3. It is caused by the way he was raised (0 = not likely; 8 very likely)
4. It is caused by stressful circumstances in his life (0 = not likely; 8 very likely)
5. It is a genetic or inherited problem (0 = not likely; 8 very likely)
6. It is God's will (0 = not likely; 8 very likely)

### **Stability & Globality**

1. How likely is it, do you think, John's voice-hearing experiences will change over time? (0 = not likely; 8 very likely)
2. I would think that John's voice-hearing occurs in every situation he encounters (0 = no not at all; 8 = to absolutely so)

### **Pity**

1. I would feel pity for John. (0 = none at all; 8 = very much)
2. How much sympathy would you feel for John? (0 = none at all; 8 = very much)
3. How much concern would you feel for John? (0 = none at all; 8 = very much)

### **Anger**

1. I would feel aggravated by John. (0 = not at all; 8 = very much)
2. How angry would you feel at John? (0 = not at all; 8 = very much)
3. How irritated would you feel by John? (0 = not at all; 8 = very much)

### **Dangerousness**

4. John is dangerous (0 = not at all, 8 = absolutely)

### **Fear**

2. I would feel threatened by John. (0= no, not at all; 8 = yes, very much)
3. I would feel scared of John. (0 = not at all; 8 = very much)
4. How frightened of John would you feel? (0 = not at all; 8 = very much)

### **Help Seeking**

1. John would need to seek help (0 = not at all, 8 = absolutely) (this question used to be under the header of helping)
2. If he sought help, John could be helped to manage his voices (0 = not at all, 8 = absolutely) (this question used to be under the header of helping)

### **Helping/Social distance**

1. How certain do you feel that you would help John,, if he asked you to? (0 = not at all certain; 8 = absolutely certain)
2. If I were an employer, I would interview John for a job. (0 = not likely; 8 = very likely)
3. If I were a landlord, I probably would rent an apartment to John. (0 = not likely; 8 = very likely)
4. I would share a car pool with John each day. (0 = not likely; 8 = very likely)
5. I would be willing to accept John as a workmate (0 = not likely; 8 = very likely)
6. I would be willing to socialise with John (0 = not likely; 8 = very likely)
6. I would not mind John having a romantic relationship with someone in my family (0 = not likely; 8 = very likely)
7. I would be willing to accept John as a neighbour (0 = not likely; 8 = very likely)
  
8. If I had, or have children, I would employ John as a babysitter (0 = not likely; 8 = very likely)

### **Coercion-Segregation**

1. I think John poses a risk to his neighbours and needs to be hospitalised. (0 = not at all; 8 = very much)
2. I think it would be best for John's community if he were put away in a psychiatric hospital. (0 = not at all; 8 = very much)
3. How much do you think an asylum, where John can be kept away from his neighbours, is best? (0 = not at all; 9 = very much)
4. If I were in charge of John's treatment, I would force him to live in a group home. (0 = not at all; 8 = very much)

**Familiarity with Voice-hearing**

1. Have you experienced voice-hearing?

☐ Yes

☐ No

2. Does anyone in your family experience voice-hearing?

☐ Yes

☐ No

3. Have you worked with individuals who experience voice-hearing in a professional or volunteer setting?

☐ Yes

☐ No

If Yes in what capacity (e.g., CPN, Social Worker, Psychologist)

5. Do you know of a friend, co-worker, or neighbour who experiences voice-hearing?

☐ Yes

☐ No

6. Does a family or close friend work with people who experience voice-hearing?

☐ Yes

☐ No

**Invitation for further study**

A colleague of ours, Bill Harper, is conducting an interview-based study on a similar topic to this questionnaire study. Bill has lifelong experience of voice-hearing himself and is interested in how people learn about voice-hearing (e.g., through media, education, or personal experiences). Interview participants will be compensated for their time. Please tick this box [ ☐ ]. If you have ticked this box you will be asked for your contact details on the next page so that Bill to contact you and provide more information about the interview study.

## **Appendix I: Author Guidelines**

*Clinical Psychology: Science and Practice* follows publication policies and ethical principles of the American Psychological Association (APA). Authors are assumed to be familiar with and are responsible for adherence to the policy. Among the tenets, the policy prohibits an author from submitting the same manuscript for concurrent consideration by two or more publications or from publishing any manuscript that has already been published in whole or substantial part elsewhere. Authors are obligated to consult journal editors concerning prior publication of any material upon which their article depends.

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## **Appendix J: Internal Reliability Analysis of the Attribution Questionnaire**



Table 9:

Comprehensive breakdown of Internal reliability of the Attribution Questionnaire and adapted Attribution Questionnaire

Corrigan's Attribution Questionnaire (Response options) <i>Original Alpha Coefficients</i> (Revised Alpha Coefficients)* <sup>1</sup>	Preliminary Analysis of Alpha Coefficients for constructs used within the present study
<p>Familiarity with Mental Illness</p> <p>1. My job involves providing services/treatment for persons with mental illness. (Yes/No)</p> <p>2. I have observed, in passing, a person I believe may have had a severe mental illness. (Yes/No)</p> <p>3. I have observed persons with a severe mental illness on a frequent basis. (Yes/No)</p> <p>4. I have worked with a person who had a severe mental illness at my place of employment. (Yes/No)</p> <p>5. A friend of the family has a severe mental illness. (Yes/No)</p> <p>6. I have a relative who has a severe mental illness. (Yes/No)</p> <p>7. I live with a person who has a severe mental illness. (Yes/No)</p> <p><math>\alpha = .70</math></p> <p>Personal Responsibility - Cognitive Attribute</p> <p>1. I would think that it were Harry's own fault that he is in the present condition. (1 = no, not at all; 9 = yes, absolutely so)</p> <p>2. How controllable, do you think, is the cause of Harry's present condition? (1 = not at all under personal control; 9 = completely under personal control)</p> <p>3. How responsible, do you think, is Harry for his present condition? (1 = not at all responsible; 9 = very much responsible)</p> <p><math>\alpha = .70</math> (.65)*<sup>2</sup></p> <p>Locus of Causality</p> <p>Not previously investigated</p>	<p>Familiarity composed in three distinct categories</p> <p>Personal</p> <p>1. Have you experienced voice-hearing?</p> <p>Family/ Friend</p> <p>2. Does anyone in your family experience voice-hearing?</p> <p>3. Do you know of a friend, co-worker, or neighbour who experiences voice-hearing?</p> <p>Work</p> <p>4. Have you worked with individuals who experience voice-hearing in a professional or volunteer setting?</p> <p>(<math>\alpha = .40</math>)*<sup>4</sup></p> <p>Responsibility – Cognitive</p> <p>1. Do you think that it is John's own fault that he experiences voice-hearing</p> <p>2. How responsible, do you think, is John for his voice-hearing experiences? (<math>\alpha = .73</math>)</p> <p>Controllable – Cognitive</p> <p>How controllable, do you think, is the cause of John's voice-hearing experiences?</p> <p>Locus of Causality*<sup>5</sup></p> <p>1. Caused by his own character (0 = not at all, 8 = absolutely)</p> <p>2. Caused by a chemical imbalance in his brain (0 = not at all, 8 = absolutely)</p> <p>3. Caused by the way he was raised (0 = not at all, 8 = absolutely)</p> <p>4. Caused by stressful circumstances in his life (0 = not at all, 8 = absolutely)</p> <p>5. A genetic or inherited problem (0 = not at all, 8 = absolutely)</p> <p>6. God's will (0 = not at all, 8 = absolutely)</p>

#### Pity - Emotion

1. I would feel pity for Harry? (1 = none at all; 9 = very much)
  2. How much sympathy would you feel for Harry? (1 = none at all; 9 = very much)
  3. How much concern would you feel for Harry? (1 = none at all; 9 = very much)
- $\alpha = .74 (.67)^{*3}$

#### Anger – Emotion

1. I would feel aggravated by Harry? (1 = not at all; 9 = very much)
  2. How angry would you feel at Harry? (1 = not at all; 9 = very much)
  3. How irritated would you feel by Harry? (1 = not at all; 9 = very much)
- $\alpha = .89 (.87)$

#### Fear - Emotion

1. How dangerous would you feel Harry is? (1 = not at all; 9 = very much)
  2. I would feel threatened by Harry? (1 = no, not at all; 9 = yes, very much)
  3. How scared of Harry would you feel? (1 = not at all; 9 = very much)
  4. How frightened of Harry would you feel? (1 = not at all; 9 = very much)
- $\alpha = .96 (.92)^{*6}$  Average Fear

#### Helping/Avoidance behavioural intention

1. If I were an employer, I would interview Harry for a job. (1 = not likely; 9 = very likely)
  2. I would share a car pool with Harry each day. (1 = not likely; 9 = very likely)
  3. How certain would you feel that you would help Harry? (1 = not at all certain; 9 = absolutely certain)
  4. If I were a landlord, I probably would rent an apartment to Harry. (1 = not likely; 9 = very likely)
- $\alpha = .88 (.87)$

#### Concern/Sympathy - Emotion

1. How much sympathy would you feel for John?
2. How much concern would you feel for John? ( $\alpha = .75$ )

#### Pity- Emotion

1. I would feel pity for John?

#### Anger – Emotion

1. I would feel aggravated by John?
  2. How angry would you feel at John?
  3. How irritated would you feel by John?
- ( $\alpha = .87$ )

#### Emotion

1. I would feel threatened by John?
  2. I would feel scared of John?
  3. How frightened of John would you feel?
- ( $\alpha = .96$ )

#### Cognitive

1. How dangerous would you think John is?

#### Helping/Avoidance<sup>\*7</sup>

##### Behavioural Intention

1. If I were an employer, I would interview Harry for a job
  2. I would share a car pool with John each day.
  3. Do you think you would help John if he asked to?
  4. I would be willing to accept John as a workmate
  5. I would be willing to socialise with John
  6. I would not mind John having a romantic relationship with someone in my family
  7. I would be willing to accept John as a neighbour.
- ( $\alpha = .93$ )

If I had, or have children, I would employ John as a babysitter.

Table 9:  
Continued

Corrigan's Attribution Questionnaire (Response options) <i>Original Alpha Coefficients</i> (Revised Alpha Coefficients)	Preliminary Analysis and changes made to constructs (Alpha Coefficients)
Coercive Treatments and Segregation behavioural intention 1. I think Harry poses a risk to his neighbors unless he is hospitalized (1 = not at all; 9 = very much) 2. I think it would be best for Harry's community if he were put away in a psychiatric hospital (1 = not at all; 9 = very much) 3. How much do you think an asylum, where Harry can be kept away from his neighbors, is best? (1 = not at all; 9 = very much) 4. If I were in charge of Harry's treatment, I would force him to live in a group home. (1 = not at all; 9 = very much) $\alpha = .89$ (.89)	Coercive Treatments and Segregation behavioural intention 1. I think John poses a risk to his neighbours and needs to be hospitalised. 2. I think it would be best for John's community if he were put away in a psychiatric hospital. 3. If I were in charge of John's treatment, I would force him to live in a group home. 4. How much do you think an asylum, where John can be kept away from his neighbours, is best? ( $\alpha = .89$ )

Notes:

\*1 Corrigan's original attribution questionnaire was analysed where possible to demonstrate internal reliability

\*2 The 'personal responsibility' construct no longer appeared to have internal consistency. Therefore, controllability was separated from this construct which subsequently improved reliability (as measured by Cronbach's Alpha coefficient scores)

\*3 The 'pity' construct no longer appeared to have internal consistency and therefore sympathy and concern were separated from the emotion pity, which improved reliability scores

\*4 Familiarity could not be grouped together as one construct therefore all analysis will be run separately (e.g., personal, family/friend and work)

\*5 There was a covariance reported between external locus of causality (3 & 4) and internal locus of causality (2 & 5). This violates reliability model assumptions. Therefore, these items were separated.

\*6 the construct 'fear' housed both cognitive and emotional components and therefore these aspects were separated, which consequently improved the internal consistency of this construct.

\*7 Questions were added to this construct (Link et al., 1989), which enhanced the internal consistency of this construct. The question 'if I had children' that was taken from Link et al. did not hang together and was rated lower than the other items and was therefore was separated from this construct

## Appendix K: A Selection of Histograms to Test for Normality

Histograms were one tool that was used to test for normality

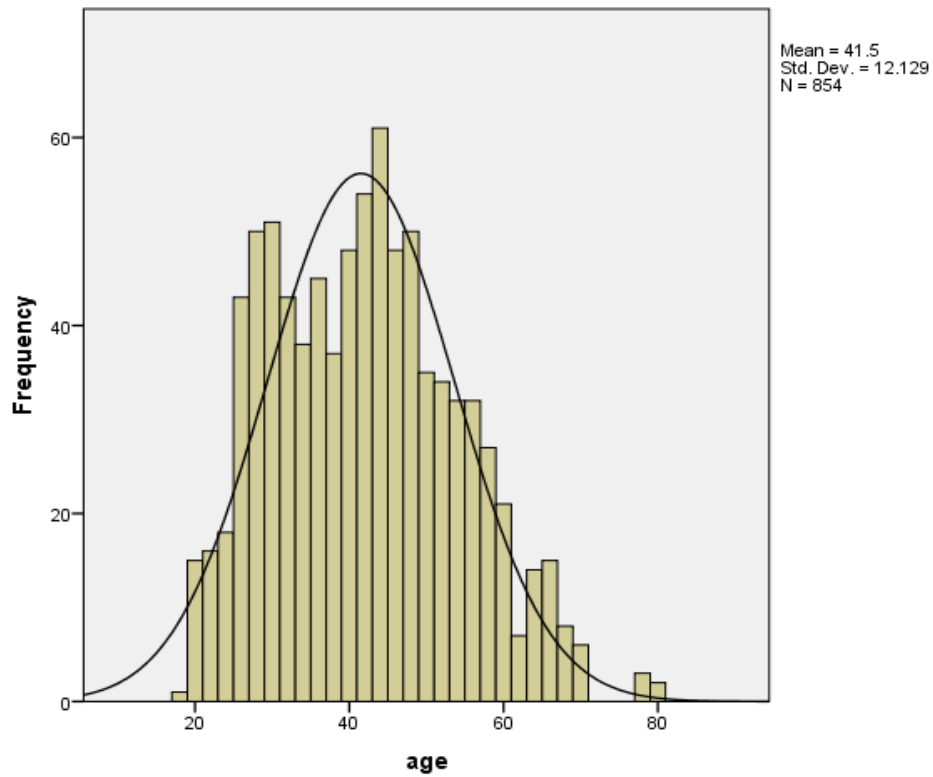


Figure 10. Histogram – Checking normality for the variable 'age'

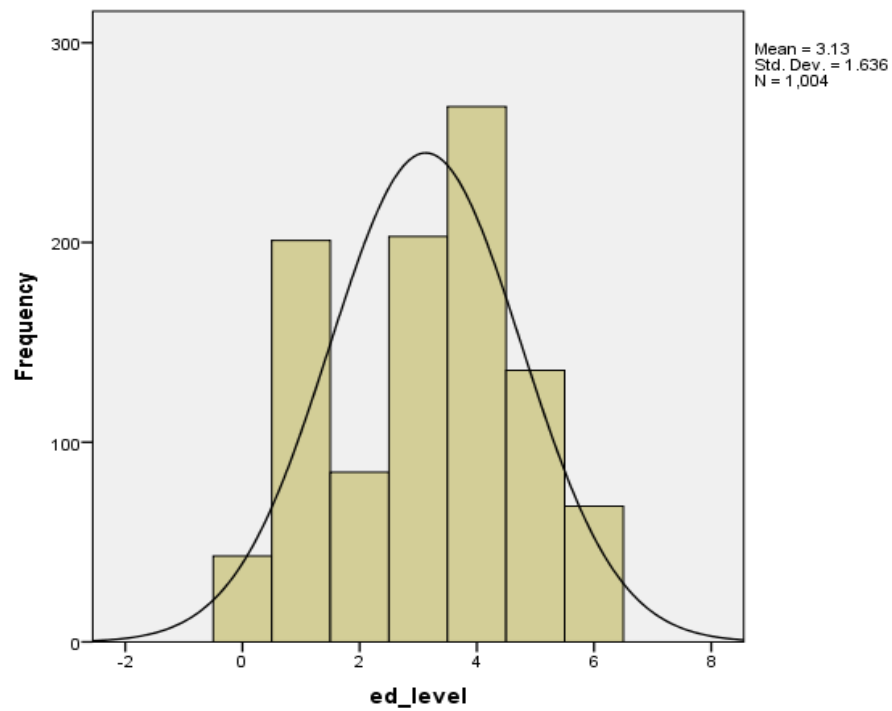


Figure 11. Histogram - Checking normality for the variable 'education level'

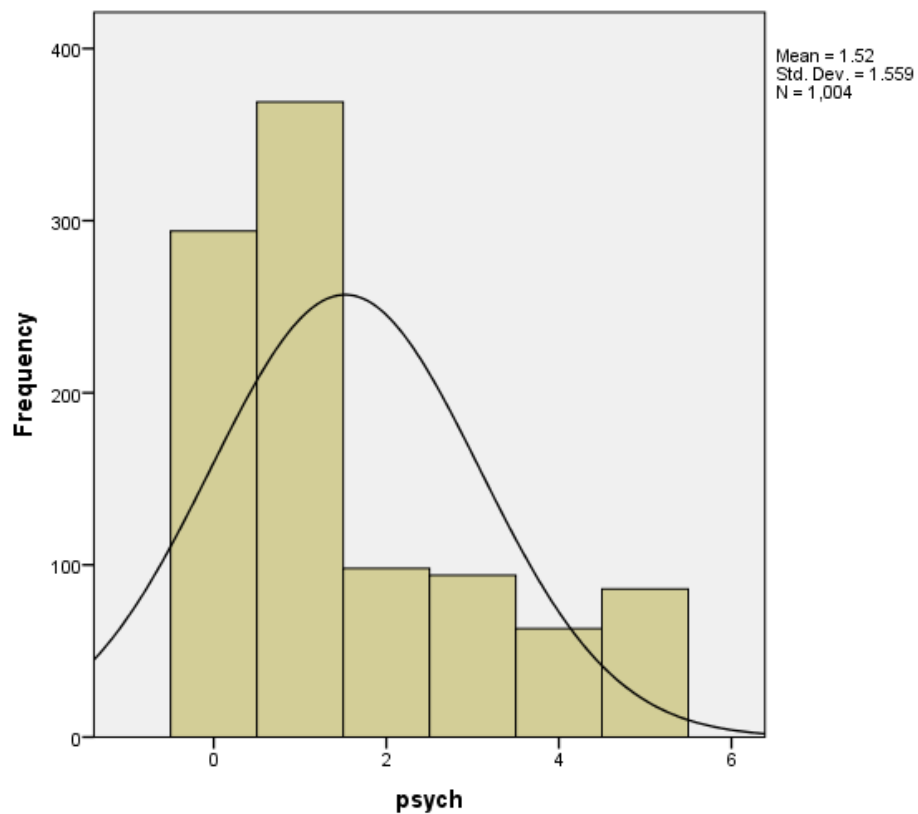


Figure 12. Histogram - checking normality for the variable 'interest in psychology'

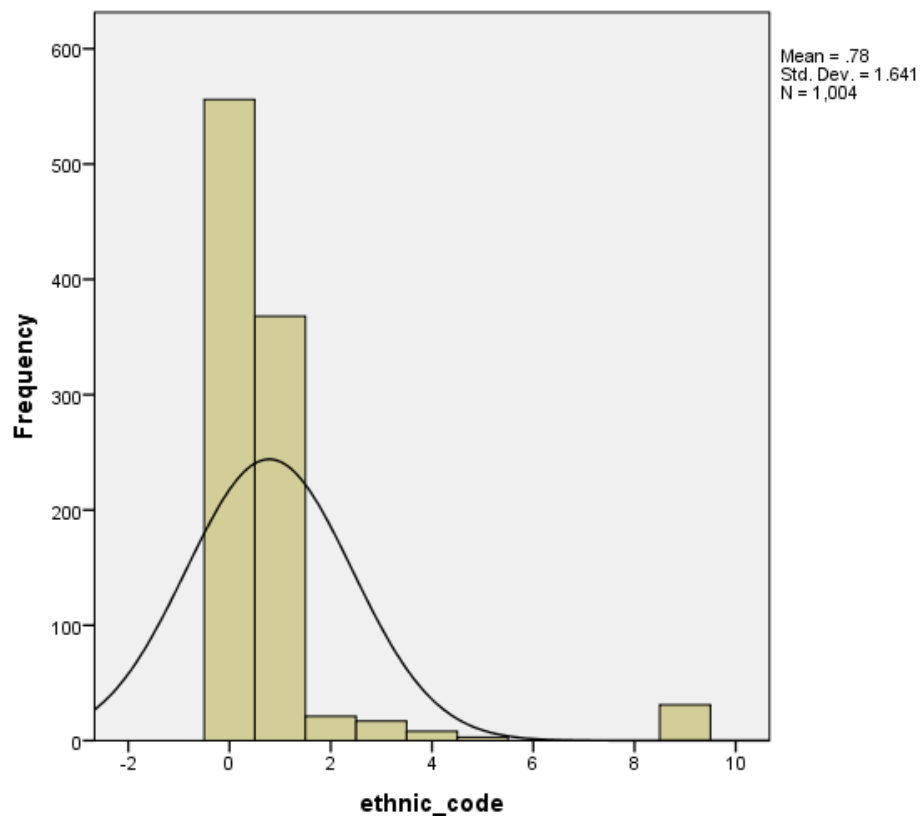


Figure 13. Histogram - checking normality for the variable 'ethnicity'

It should be noted that this variable was entered onto SPSS as ethnicity as a data code and transformed into an ordinal variable. However, all participants recorded nationality rather than ethnicity

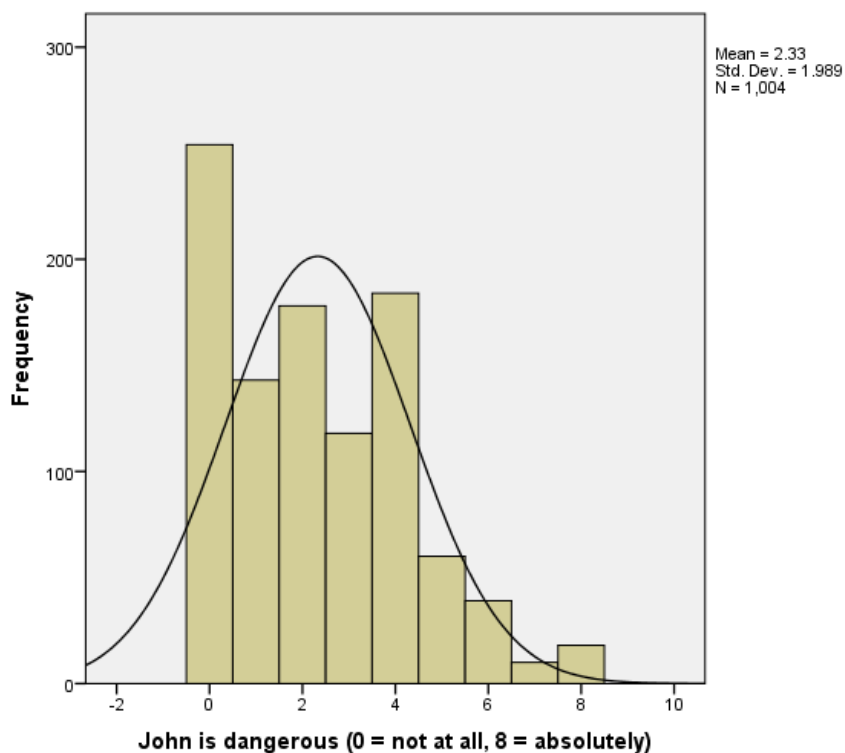


Figure 14. Histogram - checking normality of the variable 'dangerousness'

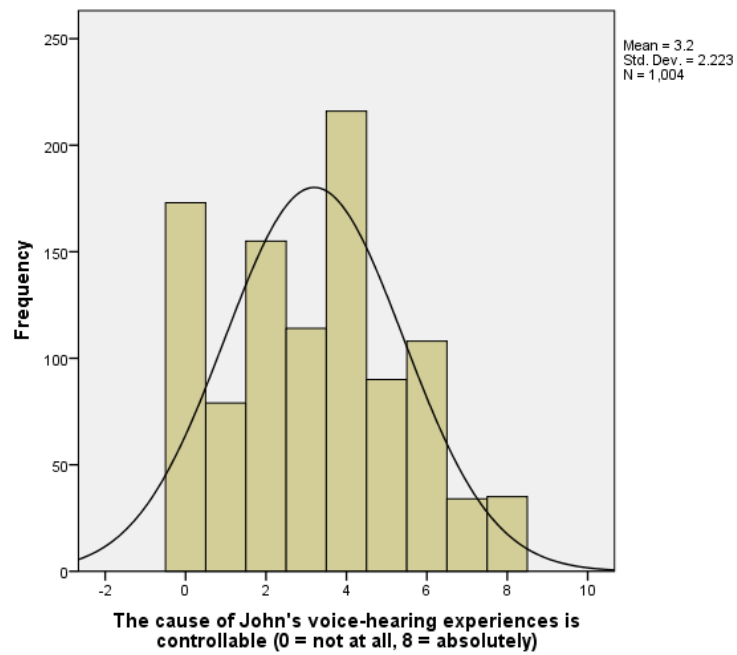


Figure 15. Histogram - checking normality for the variable 'controllability'

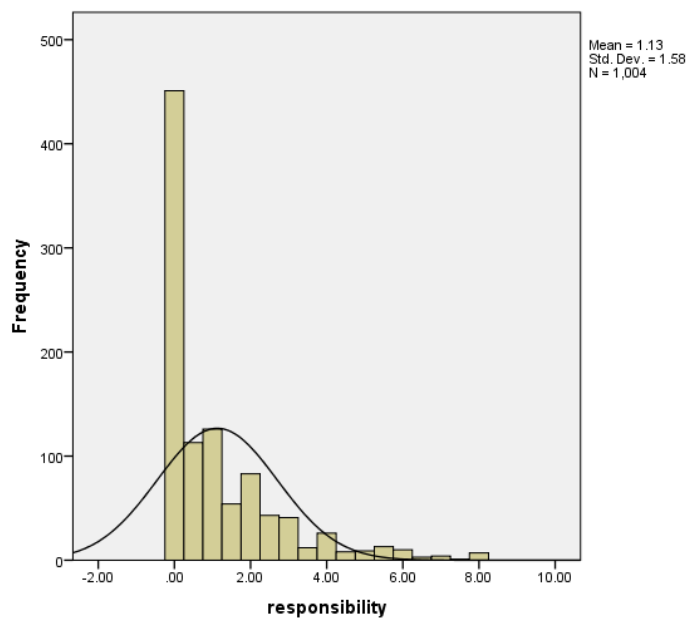


Figure 16. Histogram - checking normality for the variable 'personal responsibility'

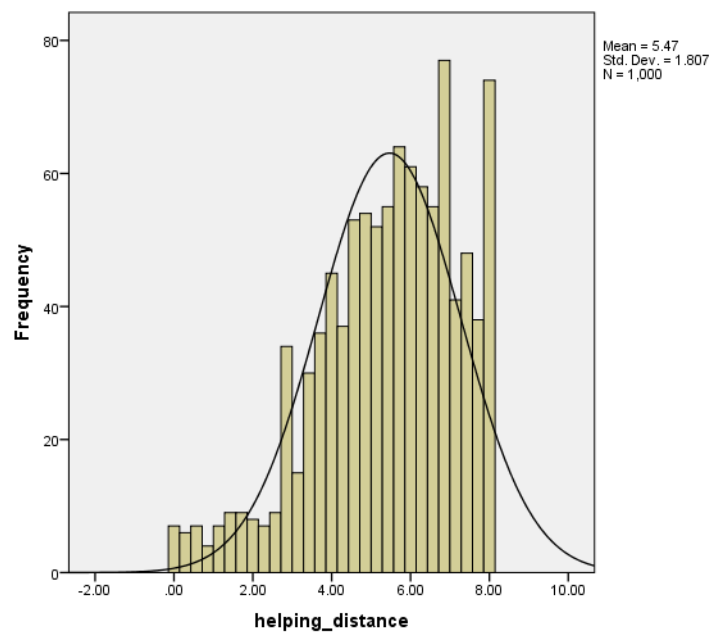


Figure 17. Histogram - checking normality of the variable 'helping/social distance'



## Appendix L – A table of Skew and Kurtosis statistics to test for normality

Table 10:

Statistics and Standard Error (SE) and Shapiro Wilks scores taken from SPSS

	Skewne ss	SE <sub>skewness</sub>	Kurtosis	SE <sub>kurtosis</sub>	Shapiro Wilks Statistics	p-value
<b>Familiarity: personal</b>	2.856	0.077	<b>6.169</b>	0.154	0.323	<.001
Familiarity: family/friend	1.132	0.077	-0.72	0.154	0.542	<.001
Familiarity: Work	0.923	0.077	1.151	0.154	0.57	<.001
Gender	1.001	0.077	1.000	0.154	0.559	<.001
Age	0.325	0.084	-0.445	0.167	0.981	<.001
Education	-0.158	0.077	-0.932	0.154	0.93	<.001
Interest in Psychology	1.001	0.077	-0.119	0.154	0.82	<.001
<b>Ethnicity</b>	<b>3.986</b>	0.077	<b>16.855</b>	0.154	0.453	<.001
Religion	0.718	0.077	-0.818	0.154	0.796	<.001
Controllability	0.181	0.077	0.804	0.154	0.942	<.001
Dangerous	0.601	0.077	-0.257	0.154	0.909	<.001
<b>Personal responsibility</b>	1.883	0.077	<b>3.687</b>	0.154	0.74	<.001
Change over time	-0.246	0.077	-0.18	0.154	0.954	<.001
Change over situation	0.736	0.077	-0.017	0.154	0.904	<.001
Locus of causality: Own character	0.779	0.077	0.27	0.154	0.87	<.001
Locus of causality: Chemical imbalance	-0.369	0.077	-0.591	0.154	0.944	<.001
Locus of causality: Way he was raised	0.399	0.077	-0.806	0.154	0.913	<.001
locus of causality: Stressful circumstances	-0.455	0.077	-0.125	0.154	0.915	<.001
Locus of causality: Genetics	-0.158	0.077	-0.672	0.154	0.95	<.001
Locus of causality: God's will	3.89	0.077	<b>16.058</b>	0.154	0.352	<.001
Pity	0.226	0.077	-0.977	0.154	0.93	<.001
Sympathy/Concern	-0.643	0.077	-0.006	0.154	0.945	<.001
Fear	0.857	0.077	-0.219	0.154	0.868	<.001
Table 6: Continued						
Anger	1.392	0.077	1.661	0.154	0.806	<.001
Helping behaviour	-0.705	0.077	0.133	0.155	0.952	<.001
<b>Coercive Behaviour</b>	2.172	0.077	<b>5.589</b>	0.154	0.732	<.001
Behavioural outcome measure	0.855	0.077	-1.272	0.154	0.578	<.001

Notes: Text highlighted in bold suggests a deviation from normal distribution

Field (2013) suggests that significant tests should not be used for large samples, as it will be likely to be significant even when skew and kurtosis scores do not deviate too much from the norm.

absolute values scores were assessed and those greater than +/- 3.0 indicated a departure from normality and have been highlighted by the bold text